Part 1 — Cohesion, competitiveness, employment and growth – Situation and trends

Table of contents

Economic and social cohesion

Introduction

Disparities in income and employment in the European Union have narrowed over the past decade and, most especially, since the mid-1990s. This is the case in terms of disparities both between countries and between regions. At the same time, productivity in the least prosperous parts of the Union has risen relatively to that elsewhere, implying an improvement in their competitiveness. Large differences in relative levels of prosperity and economic performance, however, remain, reflecting continuing structural weaknesses despite the improvements made as a result of Structural Fund support.

Disparities in both income and employment will widen much further when the new Member States join the EU in May, 2004, both across countries and across regions. These countries have, in nearly all cases, experienced significantly higher growth than the EU15 since the mid-1990s after the turmoil of the initial transition years, but have a much lower level of GDP per head and, in most cases, of employment than the EU15 average.

Sustained growth well above the rate in the present Union will be necessary for a prolonged period if these countries are to attain income levels close to the EU average. To achieve this high growth with high levels of employment, the new Member States will need substantial help to tackle wide-ranging structural problems and to realise their economic potential. Just as in the existing parts of the Union where economic performance is lagging, overcoming the structural weaknesses in the new Member States would not only raise living standards there, but it would also strengthen the competitiveness and increase the growth of the EU economy as a whole.

These are the main points to emerge from the analysis presented below. This examines, first, the growth of GDP and employment in the Cohesion countries over recent years relative to that in the rest of the EU; secondly, the extent of disparities between regions in the EU15 and how this has changed over the past decade or so, with particular focus on the Objective 1 regions receiving Structural Fund support; thirdly, economic developments in the accession countries over the recent past and the way that economic performance has varied across regions within these countries; fourthly, the growth rates they require to converge towards the income levels in the present EU within a reasonable period of time; and fifthly, the implications of an ageing population. It then goes on to consider two aspects of social cohesion, unemployment and low income levels across the EU.

Economic cohesion

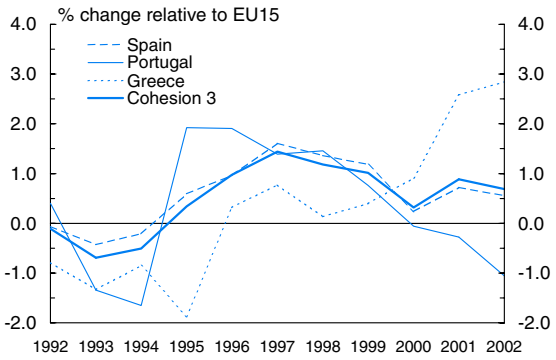
Convergence of GDP per head in the cohesion countries

In all four Cohesion countries[1], Greece, Spain, Ireland and Portugal, growth was well above the EU average between 1994 and 2001. Since, apart from Ireland, their growth of population, was only slightly higher than the average, this was translated into significant growth in GDP per head relative to that in the rest of the EU.

In Ireland, where population rose by over 1% a year, GDP per head increased in real terms by almost four times the EU average rate (8% a year as against just over 2% a year). As a result, in 2001, GDP per head in Ireland in terms of purchasing power standards (PPS) was over 17% above the EU15 average, whereas it had been 25% below average at the beginning of the 1990s. The Irish example demonstrates forcibly the effectiveness of Structural Funds support if combined with growth-oriented national policies.

In the other three Cohesion countries, growth in real GDP per head has been more modest but still higher than in the rest of the EU since the mid-1990s. From the end of recession in 1994 to the recent slowdown, growth of real GDP per head in Greece, Portugal and Spain was consistently above the EU average, whereas during the recession years, it was consistently below average (Graph 1.1).

1.1 Growth in GDP per head in Spain, Portugal and Greece relative to EU15 average, 1992-2002



Source: Eurostat, National Accounts

Between 1991 and 1994, therefore, GDP per head fell in both Greece and Portugal, while in Spain it grew more slowly than the EU average. From 1994 to 2001, growth of GDP per head in each of the three countries was similar, over 3% a year in Spain and Portugal, and just under in Greece, as compared with an EU average of just over 2% a year. Over these 7 years of economic recovery in the Union, therefore, GDP per head in these three countries together grew in real terms by almost 1 percentage point a year above the EU average (see Methodological notes at the end of the section).

As a consequence, GDP per head in the three Cohesion countries taken together increased to 79% of the EU15 average in 2001 and to 81% in 2002, in terms of PPS to adjust for different price levels. In Spain, GDP per head in these terms was less than 15% below the EU average in 2002. In Greece and Portugal, however, the deficiency was still large despite the convergence from the mid-1990s on. In both countries, GDP per head was still only 71% of the EU average in 2002.

Convergence of employment

The number in employment has also risen markedly in the Cohesion countries since the mid-1990s. Between 1996 and 2002, the proportion of people of working age (15 to 64) in jobs in the EU15 — the employment rate — increased by just over 4 percentage points. In the four Cohesion countries taken together, the increase was twice this, the average employment rate rising to 60% in 2002, just 4 percentage points less than the EU15 average (64%), half the gap 6 years earlier (Table A1.1).

The rise in Ireland was particularly large (10 percentage points), reflecting its rapid economic growth, increasing the employment rate to slightly above the EU15 average. The rise in Spain, however, was even larger (almost 11 percentage points), though the employment rate in 2002 (58½%) was still well below the EU15 average.

The increase (6½ percentage points) was more modest in Portugal, where employment was already relatively high, but still well above the EU average, taking the employment rate to 68½%, only slightly below the target of 70% set in Lisbon for the EU in 2010.

The rise in employment, on the other hand, was much smaller in Greece, only 2 percentage points over these 6 years, despite economic growth well above average. The employment rate in 2002 (57%) was, therefore, even further below the EU15 average than in the mid-1990s, with only Italy having a lower rate. In consequence, increasing employment in parts of the Union where it is well below average remains a major objective of EU policy.

Growing productivity

In Spain and, to a lesser extent, Portugal, increases in employment have contributed significantly to GDP growth, as they have in Ireland, where the number employed rose by around 5% a year between 1996 and 2002. In Ireland, employment growth was accompanied by growth of labour productivity of just under 4% a year, over three times the EU average rate. In Portugal, productivity growth was also higher than the EU average, while in Spain, where employment increased markedly, it was only around half the average.

In Greece, on the other hand, labour productivity growth was close to 3% a year between 1996 and

2002, well over twice the EU average rate, and was the predominant source of GDP growth. In Greece and Portugal, which contain the least prosperous regions in the Union, the productive base, therefore, seems to have been strengthened since the mid-1990s, increasing the potential for continued convergence in income in future years.

Recent slowdown of the EU economy

Economic growth in the EU has slowed appreciably over the three years since the publication of the last Cohesion Report. This slowdown has inevitably affected cohesion, not least because it has led to a renewed rise in unemployment in many parts (see below), but also because it has created an unfavourable climate for the continued reduction in regional disparities in both income and employment. Economic growth in the Union remained disappointing in 2003 for the third year running (at under 1%). Growth of GDP may rise to 2% in 2004 and approach 2.5% in 2005[2].

The slowdown has affected nearly all Member States. Even in Ireland, growth is estimated to have fallen to 1½% in 2003 and is forecast still to be below 4% in 2004. Portugal has been particularly affected, GDP falling by almost 1% in 2003 after growing by under ½% in 2002 and being forecast to increase by only 1% in 2004. If this forecast is realised, then much of the convergence towards the EU average in the second half of the 1990s will have been reversed in the three years 2001 to 2004.

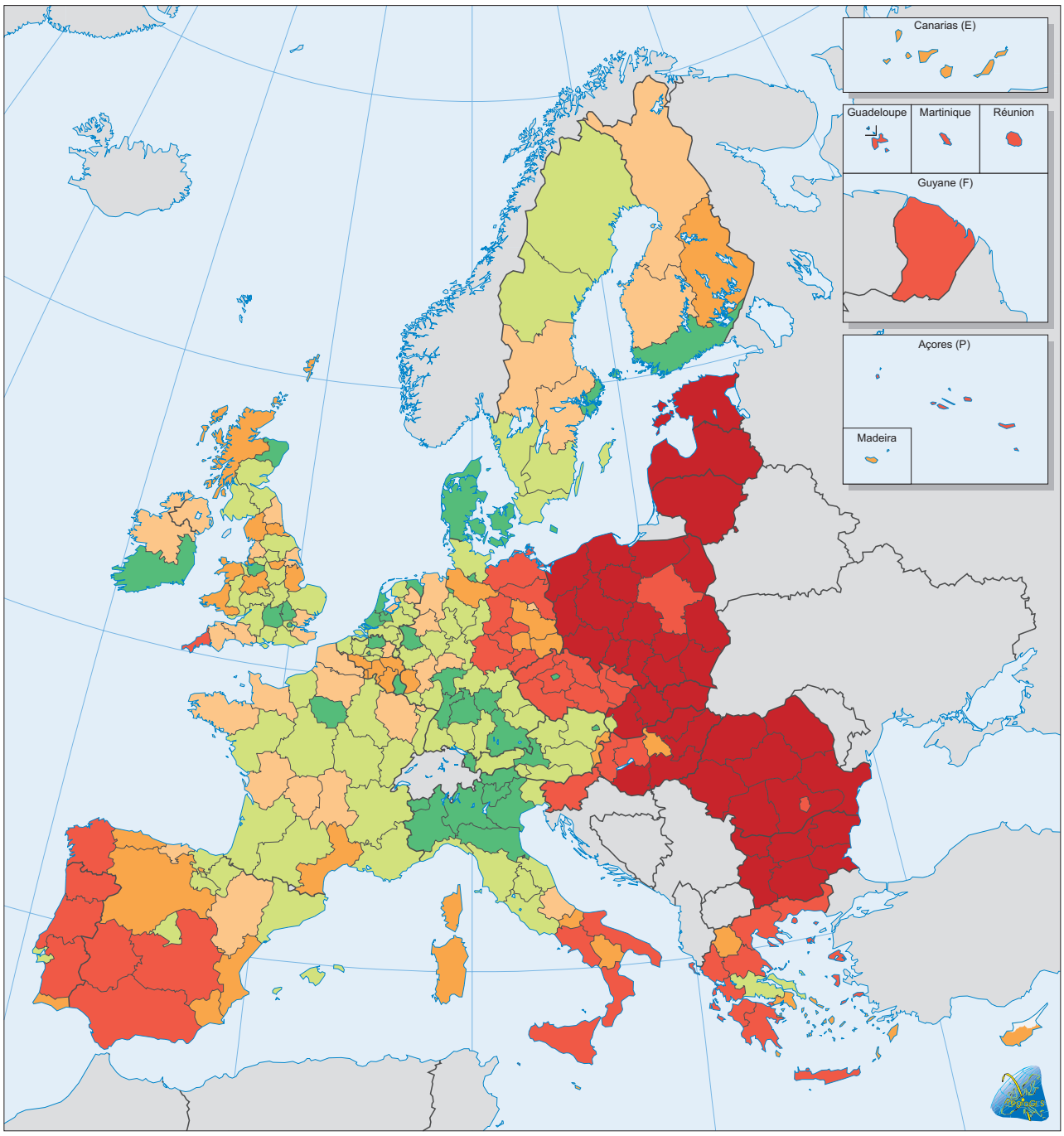
The two other Cohesion countries have fared better. In Spain, GDP seems to have grown by an average of just over 2% a year in 2002 and 2003 and growth is forecast to rise to almost 3% in 2004, while Greece appears to have been affected least of all. Here growth was around 4% in both 2002 and 2003 and the same is forecast for 2004, much higher than in the rest of the EU. In these two countries, therefore, support from the Structural Funds may have helped to maintain economic growth.

The slowdown in growth affected employment only with a relatively lengthy lag, in part perhaps because of an initial expectation among employers that it would be more short-lived. In 2003, however, it depressed the rate of employment growth in Ireland, which is estimated at under 1%, implying a fall in the employment rate (given the relatively high growth of working-age population). It also had a depressing effect in Spain, though here the rise in the number employed was still around 1½% in 2003, implying a further increase in the employment rate (by around 1 percentage point). In Greece, estimates suggest that there was a similar rise in the employment rate. In Portugal, on the other hand, the number employed is estimated to have fallen by 1% in 2003 and is forecast to remain broadly unchanged in 2004, implying a significant reduction in the employment rate.

Elsewhere in the Union, Germany and Italy have continued to perform poorly. In Germany, there was virtually no growth at all in GDP in 2002 and 2003 and in Italy, growth was less than ½% in both years. In France, where growth of GDP was similar to the EU average before 2001, only marginal growth is estimated to have occurred in 2003. In the Netherlands, where growth had previously been well above average, GDP increased only slightly in 2002 and is estimated to have fallen in 2003.

Regional disparities in GDP per head have also narrowed

Up until the recent slowdown in growth in 2001, the gap in GDP per head between the least prosperous regions in the Union — those which have been the main focus of EU cohesion policy — and the others has also narrowed over recent years. It is as yet not possible to say, however, what has happened since 2001[3]. It should be noted that the regional figures referred to in this section and the rest of the report relate to the growth of GDP per head in real terms. They are based for the first time on regional indicators derived from a new database specially constructed to be consistent over time for all EU NUTS 2 regions. They differ from the data typically used in previous empirical studies and analyses which relate to GDP in PPS terms over time, which is inappropriate to use for this



1.1 GDP per head (PPS), 2001

Index, EU25 = 100

- < 50
- 50 - 75
- 75 - 90
- 90 - 100
- 100 - 125
- >= 125
- no data

FR(DOM): 2000

Source: Eurostat

0 100 500 km

purpose (see Methodological notes at the end of this section).

Regions granted Objective 1 status because their GDP per head was less than 75% of the EU average, in PPS terms, experienced a higher rate of growth than other parts of the Union between 1988, when the Structural Funds were reformed, and 2001. As implied by the above analysis, growth has been particularly high in the regions in the Cohesion countries (which account for over half of Objective 1 regions and over half of the population living in these).

In Objective 1 regions taken together, GDP per head increased by almost 3% a year in real terms between 1994 and 2001 (the last year for which regional data are available and covering the previous programming period and the first two years of the present one) as compared with just over 2% a year in the rest of the EU. This followed growth of under 2% a year over the preceding 6 years, 1988 to 1994, though this was still above growth elsewhere in the Union (just over 1% a year)[4]. Since 1988 when the Structural Funds were reformed and expanded, therefore, GDP per head in Objective 1 regions taken together has converged consistently towards the EU average.

But the rate of convergence has varied between regions

The growth rates experienced by Objective 1 regions, however, have varied substantially between them. Convergence, therefore, has not occurred at the same rate across the Union but has been much more significant in the Cohesion countries than elsewhere, perhaps because of a combination of relatively large amounts of structural assistance and growth-oriented policies at national level (Table A1.2).

In Objective 1 regions in the four Cohesion countries, growth of GDP per head was well above the EU average over the period from the mid-1990s, as described above. This was as true for Objective 1 regions in Spain, where around 40% of the population live outside of Objective 1 regions, as in the other three countries where all the regions are eligible for support. (In Spain, growth of GDP per head in Objective 1 regions averaged 3% a year between 1994 and 2001, only slightly less than in other Spanish regions.)

Outside the Cohesion countries, growth in Objective 1 regions has been less impressive, seemingly depressed, at least in part, by slow growth at the national level. In particular, in the German new Länder, where GDP increased markedly in the early 1990s after unification, growth of GDP per head was much the same as the EU average over the 7 years 1994 to 2001 (under 2½% a year). This was, however, still well above the rate in the rest of Germany (under 1½% a year). In Italy growth in the Mezzogiorno (2% a year) was similar to that in the rest of the country and equally below the EU average.

In Objective 1 regions elsewhere in the Union, which account for only a very small proportion of national population, growth of GDP per head was in line with the EU average over this period (see Methodological note).

Despite the overall convergence of GDP per head in lagging regions towards the EU average, the gap remains wide. In 29 regions, which are home to 13% of EU15 population, GDP per head in PPS terms in 2001 was under two-thirds of the average. These are predominantly in Greece, Portugal, southern Spain and southern Italy, though they include six east German regions (Chemnitz, Dessau, Mecklenburg-Vorpommern, Magdeburg, Brandenburg-Nordost and Thüringen), Cornwall in the UK and three of the four French DOMs (Map 1.1).

Employment rates and productivity have also converged across regions

Convergence of GDP per head has been accompanied by a narrowing of disparities in employment rates across regions. While employment has increased significantly in the EU since the mid-1990s, the increase has been larger in Objective 1 regions than elsewhere. Between 1994 and 2001, the number

employed in these regions rose by just under 1½% a year, slightly more than the EU average, and in 2002, the employment rate was over 5 percentage points higher than 6 years earlier as against a rise of 4 percentage points in the rest of the Union.

Growth in labour productivity was also higher in Objective 1 regions than in other parts, averaging over 1½% a year over the period 1994 to 2001 as opposed to around 1% a year in the EU as a whole. Indeed, productivity growth contributed more to the rise in GDP than the increase in employment.

The increase in employment, however, varied markedly between Objective 1 regions. Whereas it was slightly above the EU average in Portugal and well below it in Greece, as noted above, the number employed rose markedly in Objective 1 regions in Spain (by around 3% a year) — more than in the rest of the country — and by even more in Ireland (by 5% a year). The corollary of this in the Spanish regions was low growth of labour productivity (½% a year).

By contrast, in Objective 1 regions in Germany — the new Länder — the number employed fell over this period (by almost ½% a year) but labour productivity grew by more than in other parts of the country or, indeed, in the Union as a whole (by 2% a year). Similarly, in the Italian Objective 1 regions — in the Mezzogiorno — employment increased by relatively little (by under ½% a year), while productivity growth was also above average, if by less so (over 1½% a year as against 1% in the rest of Italy).

Although competitiveness may have improved slightly in these two areas, therefore, the lack of jobs remains a major problem. This is particularly the case in southern Italy, where only 43% of working-age population were in jobs in 2002, well below the proportion in other Objective 1 regions — or indeed anywhere else in the Union. The average employment rate in Objective 1 regions as a whole was still over 10 percentage points less than in other parts of the EU (56% as opposed to 66½%) (Map 1.2). Increasing the employment rate in lagging regions, therefore, remains a central part of EU cohesion policy.

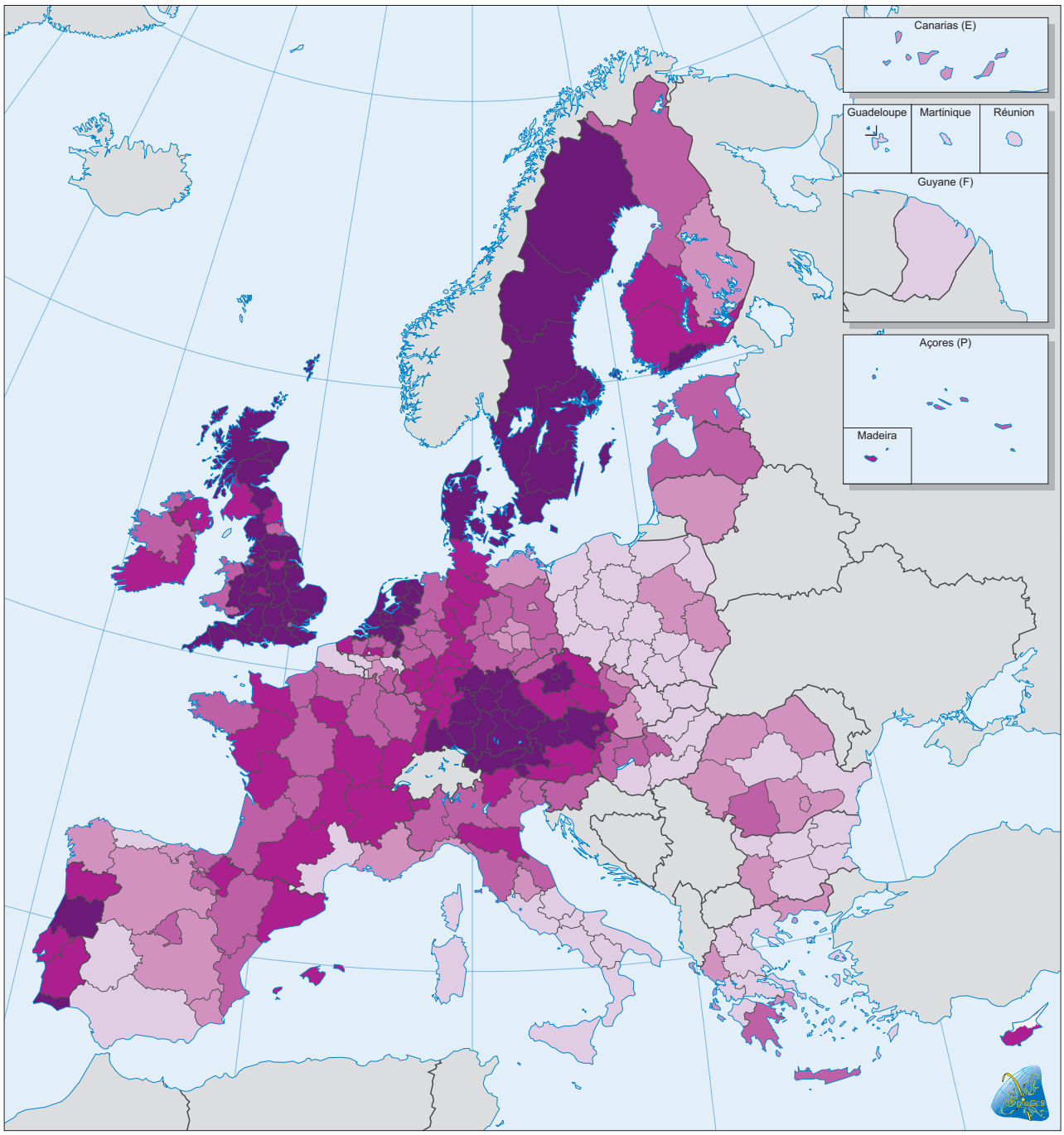
Problem regions not confined to those with the lowest GDP per head

Weak economic performance in the EU, and the structural problems that underlie this, is not confined to regions with the lowest levels of GDP per head. Problem regions, both at NUTS 2 and, even more numerously, at NUTS 3 level, are spread across the Union. The problems affecting these regions stem from a number of different sources, including the decline of traditional industries, geographical features which constrain development, falling employment and population and a decline in essential services or a lack of innovative capacity and the necessary support structures. All of these, either individually or in combination, tend to discourage investment and deter new business development. These problems are described in later sections (see the sections on territorial cohesion and on competitiveness factors). If not tackled, they are liable to worsen over time leading to a progressive deterioration in economic performance.

For example, there are 11 NUTS 2 regions with comparatively low levels of GDP per head in which real growth of GDP between 1994 and 2001 was around half the EU average rate or less over the period. All of these regions had a level of GDP per head in PPS terms significantly below the EU average but above the 75% threshold for eligibility for Objective 1 status.

These 11 regions are spread across the north-east of England, in several parts of Germany (Koblenz and Münster, for example) as well as in Sweden. In each case, they had low growth of productivity, this increasing on average by only ½% a year over the period — only slightly over a third of the EU average — as well as low growth of employment (just over ½% a year as against an EU average of almost 1½% a year).

Taken together, their GDP per head in PPS terms in 2001 was around 85% of the EU average, but nearly all of them contain areas in which there has been little



1.2 Employment rates, 2002

Employed 15-64 as % of population 15-64

- < 56.0
- 56.0 - 60.2
- 60.2 - 64.4
- 64.4 - 68.6
- >= 68.6
- no data

EU27 = 62.4
Standard deviation = 8.4

Sources: Eurostat and National Statistical Offices

0 100 500 km

growth at all over the past 10 years or more and GDP per head was below 75% of the EU average.

If economic growth in these regions continues to be depressed, then GDP per head before too long will fall below the 75% level, at which time they might become eligible for Objective 1 assistance. By then, however, the structural problems which need to be overcome are likely to have deteriorated further, requiring more drastic action. This raises the question of how far cohesion policy should anticipate such a worsening and intervene at an earlier stage to try to arrest decline and to do so with a lower level of expenditure.

Growth of GDP in the accession countries

In the new Member States, growth of GDP averaged just over 4% a year between 1994 and 2001 in all except Hungary (just below) and the Czech Republic. In the latter, growth was only just over 2% a year, while in Bulgaria and Romania (the two accession countries not due to join the EU in 2004), GDP increased barely at all. Since, however, population changed in different ways across the countries — increasing significantly in Cyprus and Malta, declining by around 1% a year in the three Baltic States as well as in Bulgaria and changing relatively little elsewhere — growth in GDP per head varied by slightly more than growth in GDP.

Overall, growth of GDP per head in real terms in the new Member States was around 1½% a year above the EU15 average over this period.

Since 2001, growth has slowed in these countries taken together, in part because of the fall-off in growth in the EU, their major export market. Overall, growth was just under 2½% in both 2001 and 2002 and is estimated to be 3% in 2003. The slowdown was particularly marked in Poland, where growth averaged only just over 1% in 2001 and 2002 and it was even lower in Malta because of a fall-off in tourism from the EU.

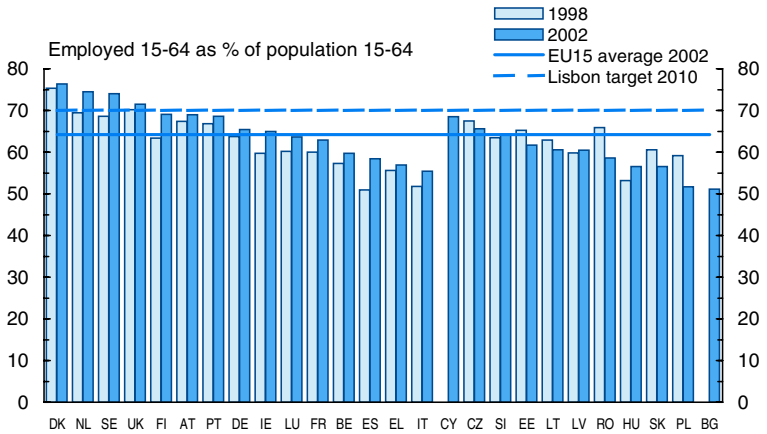
But little growth in employment as restructuring continues

Even before the recent slowdown, growth did little to ease the employment problems which emerged in the transition countries in the early 1990s. In all of the countries with high growth rates, except Hungary and Slovenia, labour productivity increased markedly and employment either rose by only a little (Latvia) or fell (in all the other cases), reflecting the ongoing restructuring of their economies which in most cases is far from complete.

Growth in the accession countries during the transition has, therefore, come predominantly from increases in output per person employed rather than from higher employment. In most countries, this has remained the case over the most recent years, especially in the countries with the lowest levels of GDP per head. (`Accession countries´ is used throughout this report to denote the 10 new Member States plus Bulgaria and Romania.)

Between 1998 (when data became available for most of the countries) and 2002, the employment rate fell by over 7 percentage points in Poland, as well as in

1.2 Employment rate, 1998 and 2002



MT: no data; BG and CY: no data for 1998

Source: Eurostat, LFS

Romania, by almost 4 percentage points in Estonia and by 2 percentage points in the Czech Republic, Slovakia and Lithuania. On the other hand, the employment rate increased in Slovenia, though by less than 1 percentage point, Latvia and Hungary (by over 3 percentage points in the last), though as noted below the level remains well below the EU15 average (Graph 1.2).

The slowdown has led to a further fall in employment, especially in Poland, where the number in work declined by over 2% in 2002 and is estimated to fall further in 2003. In the latter year, growth of employment of more than ½% is estimated only in two countries, Lithuania and Slovakia.

Employment rates therefore remain low in the accession countries

As a consequence of the depressed growth of employment, the proportion of working-age population in jobs in the accession countries has declined steadily since the transition began while, in the EU15 the proportion has risen. In 2002, this proportion — the employment rate — averaged just 56% in the 10 new Member States, much lower than the EU15 average (just over 64%) though similar to that in present Objective 1 regions. This similarity, however, disguises the fact that, as noted above, employment rates in Objective 1 regions were tending to increase significantly up until the recent slowdown, whereas in the new Member States, they were tending to decline.

In all of the accession countries, except Cyprus, the employment rate was below the targets for the EU set at the Lisbon summit of 67% in 2005 and 70% in 2010. While it was relatively close to the 67% target in the Czech Republic (65½%) and was the same as the EU average in Slovenia, elsewhere the gap was substantial. In Hungary and Slovakia, the rate was around 56%, similar to that in Greece and slightly higher than the average for Italy, and in Poland, it was just under 52%, lower than in any of the present Member States.

Wide disparities in GDP per head between regions in accession countries

Growth in the accession countries has been far from regionally balanced. In all the transition countries, it has been disproportionately concentrated in a few regions, particularly in capital cities and surrounding areas. As a result, regional disparities in GDP per head have widened significantly.

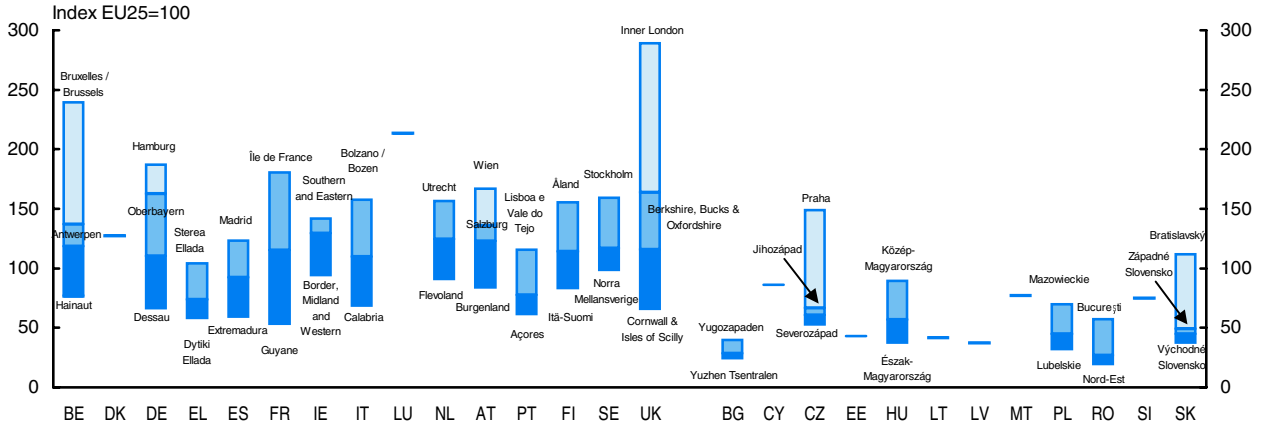
In both the Czech Republic and Slovakia, the 20% of the population living in the most prosperous regions have a GDP per head which is just over twice as high as the 20% living in the least prosperous regions. This is similar to the gap in Italy or Germany. In Hungary, the level of GDP per head in the regions with the most prosperous 20% of population is some 2.4 times the level in the least prosperous, more than in any of the existing EU Member States.

Enlargement will increase the disparity in GDP per head across the EU markedly

The 10 new Member States will add much more to EU population (just under 20%) than to its GDP (around 5% in terms of Euros). Bulgaria and Romania together would add a further 8% to EU population but under 1% to GDP. Even taking account of lower costs of living, all the countries are much less prosperous than the existing EU Member States, if to widely varying degrees. The impending enlargement to 25 Member States, and subsequently to 27 or more, will, therefore, fundamentally change the scale of disparities across the EU. Cohesion policy — and other EU policies — will need to adapt in response to this.

Although the new Member States have grown faster than the EU15 since the mid-1990s, as noted above, the gap in GDP per head remains pronounced. Only Malta, Cyprus, the Czech Republic and Slovenia had a GDP per head in PPS terms above 60% of the EU15 average in 2002. In Poland, Estonia and Lithuania, it was only around 40% of the average and in Latvia, just 35% of average. In Bulgaria and Romania, it was only around 26–27% of the average.

1.3 GDP per head (PPS) by country and regional extremes, 2001



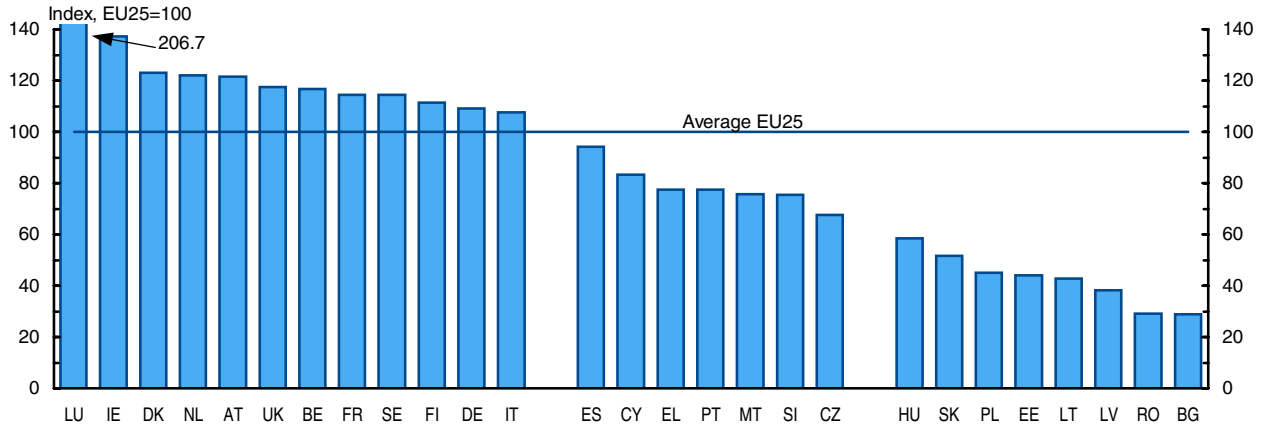
Source: Eurostat, Regional accounts

Once enlargement occurs, therefore, there will be a major widening of the income gap between the most and least prosperous Member Stares. Even though average GDP per head in an enlarged EU will be lower than in the EU15, only Cyprus has a level above 80% of the average in an EU of 25 Member States. In Latvia, the level is 38% of the EU25 average, less than half the level in Greece or Portugal (77–78%), while in Romania and Bulgaria, it is under 30% of the average (Graph 1.3).

In other words, whereas the gap between the average GDP per head in the EU15 and the level in the least prosperous Member States is currently just under 30% (ie Greece and Portugal have levels almost 30% below average), the gap will double when the new Member States join in 2004 (ie Latvia has a GDP per head which is over 60% below the EU25 average) and is likely to widen even more once Bulgaria and Romania enter.

In an enlarged EU, countries can be divided into three groups according to GDP per head in PPS terms. For the first group consisting of 12 of the present 15 Member States, GDP per head is well above the EU25 average (10% or more). In the second group of

1.4 GDP per head (PPS), 2002



Source: Eurostat, National accounts

7 countries, comprising the remaining three present Member States, Spain, Portugal and Greece, plus Cyprus, the Czech Republic, Slovenia and Malta, GDP per head is between 68% and 94% of the EU25 average. In the third group of 8 countries (including Bulgaria and Romania), all of which are new or prospective Members, it is under 60% of the average (Graph 1.4).

Disparities between regions will widen even further with enlargement

Enlargement will have an even greater effect on disparities between regions than between countries. Whereas around 73 million people, some 19% of the EU15 population, live in regions where average GDP per head in the years 1999 to 2001 was below 75% of the EU average, according to the latest estimates, almost as many, some 69 million of the 74.5 million who will become EU citizens in 2004 (92% of the total), live in regions with GDP per head below 75% of the EU25 average in the new Member States.

This does not mean, however, as discussed further below, that these 69 million people will simply add to those at present living in regions with GDP per head below 75% of the EU average, since this average itself will be reduced (from an average covering 15 Member States to one covering 25) as a result of enlargement. This will have the effect of reducing the number of people living in such regions in the present EU15 by around 19 million. The net result of enlargement will, therefore, be to increase the number living in regions with GDP per head below 75% of the average to 123 million in the EU of 25. Once Bulgaria and Romania join, this total will rise further to over 153 million or to almost 32% of the EU27 population, ie to more than double the number now living in such regions.

In an EU of 27 Member States, two-thirds of those in regions with GDP per head of below 75% of the EU25 average would live in the new Member States. Around one in six people would live in regions where GDP per head is below half the EU average. None of the 38 regions concerned is in the present EU15.

The statistical effect

Enlargement will add very much more to EU population than to GDP, reducing average GDP per head significantly. Average GDP per head in the EU of 25 Member States will be around 12½% less than the average in the EU of 15. For 17 regions, it will mean that their income per head is no longer below the 75% threshold given that this is now lower than it was before. It will also be above 75% in Malta where it is now below 75% of the EU15 average.

As noted above, estimates suggest that almost 19 million people live in such regions, most of which at present have Objective 1 status under the Structural Funds (with a further 400 thousand in Malta). If the criterion for determining Objective 1 status remains unchanged, the regions concerned will lose their eligibility for structural assistance, even though their GDP per head will be precisely the same after enlargement as before, as will the structural problems which underlie its relatively low level and which prompted the structural assistance initially. On the present estimates, four of these regions, for example, are in the eastern part of Germany, four are in the UK, four are in Spain, one is in Greece and one in Portugal (Table A1.3)

Employment disparities between regions will be equally wide

Employment rates in most regions in the accession countries are lower than the present EU15 average, though in none are they as low as in the south of Italy. Only in four regions — Cyprus and Střední Čechy, Jihozápad and Praha in the Czech Republic — did the rate exceed the 67% Lisbon target for 2005 and only in Praha was it over 70%, the Lisbon target for 2010. By contrast, there were 53 (NUTS 2) regions in the current Member States in which the rate was above this, most of these being in the Nordic countries, the UK and the Netherlands.

In an enlarged EU of 25 Member States, there will, therefore, be 14 regions in which the employment rate

is under 50%, 6 in southern Italy, one in Spain (Ceuta y Melilla) and one in France (Corse) in the present EU15 and five in Poland and one in Hungary (Észak-Alföld) in the new Member States. (In Bulgaria, there are another three regions with rates below this level.)

These low employment regions for the most part have relatively low levels of GDP per head, to a large extent because of the failure to employ large numbers of people in productive activities. However, the association between employment rates and relative levels of GDP per head is far from being uniform. In some of the accession countries, Poland, in particular, though also Romania, the employment rate is more closely associated with the size of the agricultural sector, which in some sense provides jobs of last resort, than with GDP per head. This reflects the continued persistence of subsistence farming and contrasts with the position in the present EU, where employment rates tend to be low in agricultural regions.

It suggests that, in these regions especially, economic development is likely to be accompanied by substantial restructuring and shifts of employment between sectors, though the need for restructuring is by no means confined to these regions.

Sectoral composition suggests significant restructuring is likely in the accession countries…

An insight into possible future changes in the structure of employment as economic development takes place can be obtained by comparing the way that employment is divided between sectors of activity in the accession countries and in the present EU15, and within the latter, in existing Objective 1 regions and others (Map A1.1). Such a comparison is most instructive if an explicit adjustment is made for differences in the overall employment rate between different areas — in other words, by examining the proportion of people of working-age population employed in different sectors — rather than by simply comparing the shares of various sectors in total employment. This then gives a guide to the possible way in which those finding jobs will be divided between sectors as the numbers employed in the less developed countries and regions increase.

The overall employment rate in the accession countries, despite falling over recent years, was still slightly higher than in existing Objective 1 regions in 2002. This is largely due to much larger numbers employed in agriculture and manufacturing, especially in textiles and clothing and other basic industries, which is offset in large part by lower employment in services as well as in construction (Table A1.4).

The relatively low employment in services in the accession countries is much more apparent in comparison with non-Objective 1 regions in the EU, which have much larger numbers employed in this sector than Objective 1 regions. The shortfall is large in all service activities. It is particularly pronounced in advanced and communal services (business and financial services and education, health and social services) where the difference between Objective 1 and other regions is most evident.

While, therefore, the structure of employment in the accession countries has tended to move towards that in the EU during the transition years, the rate of change has been slow. The substantial job losses in agriculture and basic industries have not as yet in most regions been offset by sufficient growth of jobs in services. And further substantial job losses in agriculture in particular can be expected in future years.

… particularly towards the service sector in which job growth in the EU has been concentrated

On the experience of existing Member States, future job growth in services in the accession countries — as well as in present Objective 1 regions — is likely to be concentrated in advanced and communal services, though significant expansion can also be expected in basic services (the distributive trades, hotels and restaurants, transport, communications and personal and community services) in which the level of employment is still well below that in the EU15.

Over the 6-year period, 1996 to 2002 when the overall employment rate in the EU15 increased by just over 4 percentage points, virtually all the growth in jobs was in services, with advanced services accounting for some 40% of the net increase in employment and communal services for another 26% (Graph 1.5). Between them, therefore, these two sectors were responsible for twice the number of net additional jobs created as in basic services which was slightly larger in terms of the total number employed.

By contrast, jobs in agriculture, basic manufacturing industries and public utilities declined in relation to working-age population, while there were small increases in employment in the chemical and engineering industries and a larger rise in construction, which tends to be affected more than other sectors by the economic cycle. The continued trend towards advanced service activities as well as communal services underlines the need to raise educational attainment levels given their demand for highly qualified workers, which is likely to continue to rise in future years[5].

The challenge facing accession countries, which is mirrored in Objective 1 regions, is to strengthen competitiveness over the long-term in order to sustain high rates of economic growth while at the same time increasing employment rates. Strengthening competitiveness means achieving continuing gains in productivity which remains substantially below the level in the EU15 and even further below the level in the more prosperous regions.

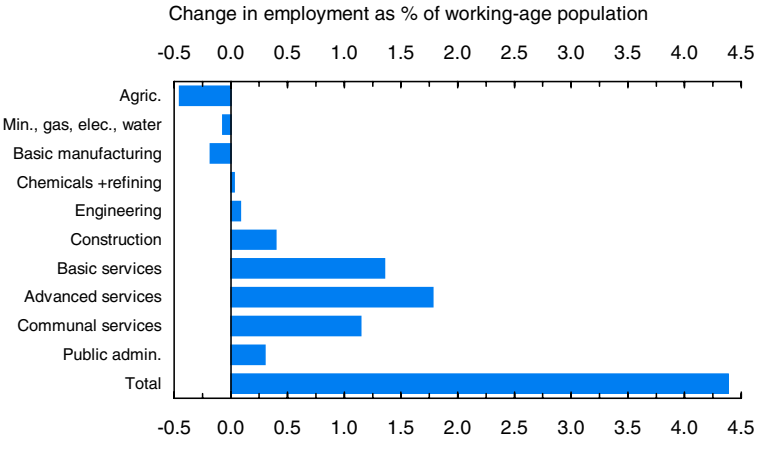
Although it is important to stress that there is no conflict in the long-term between this objective and raising employment — indeed, the creation of long-tem, stable jobs is dependent on increasing competitiveness — this is not necessarily the case in the short-term. Shifts of employment out of low productivity sectors, particularly agriculture, into higher productivity ones are essential if competitiveness is to be increased. At the same time, there is an ongoing need to increase productivity within sectors of activity and to continue the process of rationalisation and reduction in overmanning which has occurred over the transition period (Map A1.2).

The challenge of convergence in the accession countries

The structural problems in the acceding countries which underlie their low GDP per head and low level of employment are both substantial and wide-ranging. The challenge for cohesion policy is to help them bring their infrastructure up to date, modernise their education and training systems and create a business environment favourable to investment so that they can sustain the high rates of growth required for them to converge towards employment and income levels in the EU at an acceptable pace. For this to occur implies growth rates for most of the countries of at least 5–6% a year for a prolonged period (see Box on catch-up scenarios).

This is not impossible, as the experience of Ireland demonstrates forcibly, but it will require effective support from the EU to ensure that structural problems in these countries are overcome and that their

1.5 Change in sectoral employment rates in the EU15, 1996-2002



Source: Eurostat, LFS and Regional accounts

employment levels and competitiveness can be increased substantially, as well as an efficient mix of internal policies.

The contribution of cohesion policy to EU growth

Achieving high rates of growth by improving productivity performance and raising employment in the accession countries is not only important for raising living standards there and for generating the resources required to finance improvements in infrastructure, communal services and so on, it is also important for existing Member States. Given the increasing interdependencies which exist in trade and investment, the economic development of the new Member States can potentially provide the dynamic to initiate and sustain higher rates of growth throughout the EU.

Structural deficiencies in endowment of infrastructure and human capital mean that these countries, as well as many lagging and problem regions in the EU15, are not able to contribute as much as they might to the competitiveness of the EU as a whole.

The result is lower levels of income and employment in the EU than can potentially be achieved and lower growth potential to the detriment of all, not just those directly affected. Reducing existing disparities would, therefore, strengthen the competitiveness of the EU economy and its capacity for sustained development. It would also reduce the risk of bottlenecks and inflationary pressure occurring in the stronger regions as growth takes place, so bringing it to a premature end.

In the case of the accession countries, it would enable them to increase their rate of economic growth and, accordingly, to expand their imports from existing EU Member States. At present, imports amount to over half of GDP in these countries — much more than in the Cohesion countries (in Greece and Spain, imports are only around 30% of GDP and in Portugal, 38%) — and have tended to rise by much more than GDP when growth occurs. This is likely to continue to be the case for some time to come, as countries buy in the manufactures, particularly machinery and equipment, not produced domestically which are required for their continued development.

Any increase in GDP, therefore, goes disproportionately on purchasing goods from abroad, most especially from existing EU Member States, which account for some 60% of total imports, and in particular from Germany (which accounts for around 25% alone) and Italy (almost 10%).

The gains to Germany and Italy, in particular, of stimulating growth in the new Member States are, therefore, substantial, though all existing EU countries stand to benefit from this and from the higher growth of the EU market which it will give rise to, in much the same way that they benefit from growth of the Cohesion countries and Objective 1 regions (see Part 4, section on the Structural Funds as a means for economic integration).

Population in decline across Europe

Population in the EU15 has grown only slowly for many years. Since the mid-1990s, growth has averaged only 0.3% a year, most of this being a result of net inward migration. In several Member States — Germany, Italy and Sweden, in particular — population would have fallen without this. Natural population growth is projected to fall further in the future and with similar rates of migration as in the past, population will begin to decline in most Member States over the next 20 years.

Falling population was already a feature of many regions in the second half of the 1990s (in 55 of the 211 NUTS 2 regions in the EU15). In the accession countries, population fell in most regions over this period (in 35 of the 55 NUTS 2 regions), due to a natural fall as much as outward migration.

And is set to fall further in future years

According to the latest demographic projections[6], population will continue to grow slowly in all EU15

How long will it take the accession countries to catch up?

The scale of the cohesion challenge posed by enlargement can be illustrated by 'catch-up scenarios', indicating how long it will take GDP per head in the new Member States together with Bulgaria and Romania to reach the EU average on simple assumptions about their growth rates relative to the average rate in the present EU15.

Two scenarios are considered here, the first in which growth is maintained in these countries at 1½% a year above the EU15 average, which is the average achieved over 7 years 1995 to 2002, the second in which growth is sustained at 2½% above the EU15 average. Both start from the latest forecast of GDP per head in the different countries in 2004

If growth in all the countries can be sustained into the future at 1½% above that in the rest of the EU (i.e. 4% a year if growth is 2½% a year in the EU15), average GDP per head in the 12 countries would remain below 60% of the enlarged EU27 average until 2017 (Graphs 1.6 and 1.7). In this year, it would exceed 75% of the average only in Slovenia, Cyprus, the Czech Republic and Hungary. If growth were to continue at this rate, Slovakia would reach 75% of the average by 2019, but it would take the next country, Estonia, a further 10 years to attain this level. In 2035 — more than 30 years from now — Poland would be approaching this threshold but it would take Latvia until 2041 to reach it. At this rate of growth, Bulgaria and Romania would still have a level of GDP per head below 75% of the average in 2050.

If growth were to be sustained at a significantly higher rate than this, at 2½% above the EU15 average (implying growth of just over 5% a year if growth in the EU15 is 2½%), then convergence would, of course, happen within a shorter period of time. Nevertheless, the number of years involved remains considerable for many of the countries. For Poland, for example, even at this rate, it would still take 20 years or more for GDP per head to reach 75% of the EU average and many more years to converge to the EU average or close to it. For Bulgaria and Romania, it would take much longer than this. Nevertheless, at this rate of growth, the number of regions in the accession countries which require structural support because their GDP per head is below 75% of the EU average is reduced markedly quicker than if growth were to be slower. These scenarios should not be taken to imply that growth of 4% or 5% a year in these countries is the most that can be expected. First, the experience of Ireland over the past decade shows what can be achieved in terms of rapid growth. Secondly, growth potential in the new Member States will be greatly enhanced by improvements in the capital stock as a result of EU cohesion policy.

Even if rates of growth well above the average in the EU15 can be sustained in the long-term, these scenarios demonstrate that for most of the countries, catching-up to the EU average is likely to be a long-term process.

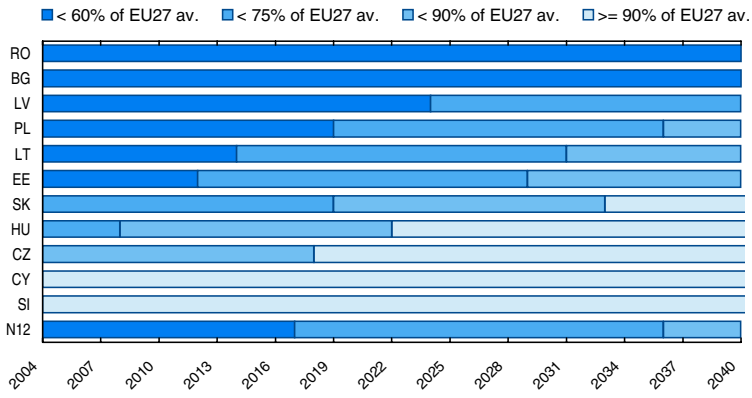
Member States over the remainder of the decade, except in Italy and Austria, where it will decline. Before 2015, population is projected to begin falling as well in Greece, Spain, Portugal — the three southern Cohesion countries — and Germany, and over the following 10–15 years, it will also begin falling in Belgium, Finland and Sweden.

In the accession countries, population has already begun to decline in all except Cyprus, Malta and Slovakia, and in the last of these it is projected to begin falling before 2020 (Graph 1.8).

Working-age population also set to decline

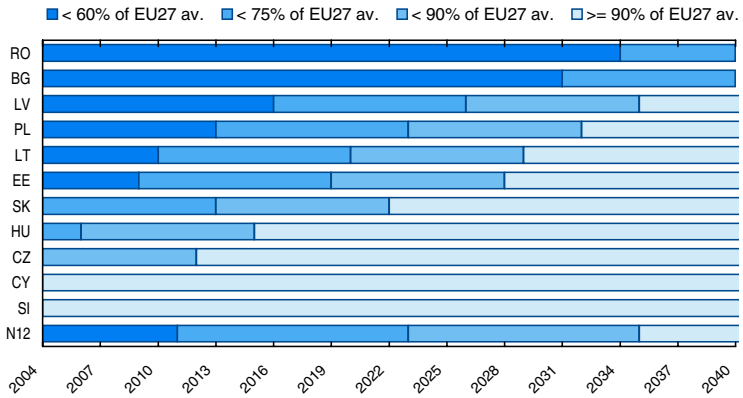
More relevantly for employment, population of working age (15 to 64) is likely to begin falling earlier than the total. It is projected to decline over the remainder of the decade in the south of Europe, in particular, in Greece, Portugal and Italy but also in Germany. After 2010, decline will set in within a few years in all countries apart from Ireland and Luxembourg. In the EU15 as a whole, the number is projected to be some 4% lower in 2025 than in 2000 but in the three southern Cohesion countries, 6% lower and in Italy, over 14% lower.

1.6 Simulation of GDP per head (PPS) in the accession countries, 2004-2040 (relative growth assumption 1.5% pa)



Growth assumption: 1.5% per year higher than EU15 average
N12 = new Member States plus BG and RO; MT: no data
Source: DG REGIO calculations based on Eurostat, National accounts

1.7 Simulation of GDP per head (PPS) in the accession countries, 2004-2040 (relative growth assumption 2.5% pa)



Growth assumption: 2.5% per year higher than EU15 average
Source: DG REGIO calculations based on Eurostat, National accounts

In the accession countries, working-age population is projected to decline over the remainder of the decade in all except Cyprus, Malta, Poland and Slovakia. In the following few years, it will begin falling everywhere apart from Cyprus. In 2025, on the latest projections, the number of people aged 15 to 64 in the accession countries will be over 10% less than in 2000. In Bulgaria and Latvia, it will be over 20% less, in Estonia, almost 30% less (Map A1.3).

More people of working age over 50

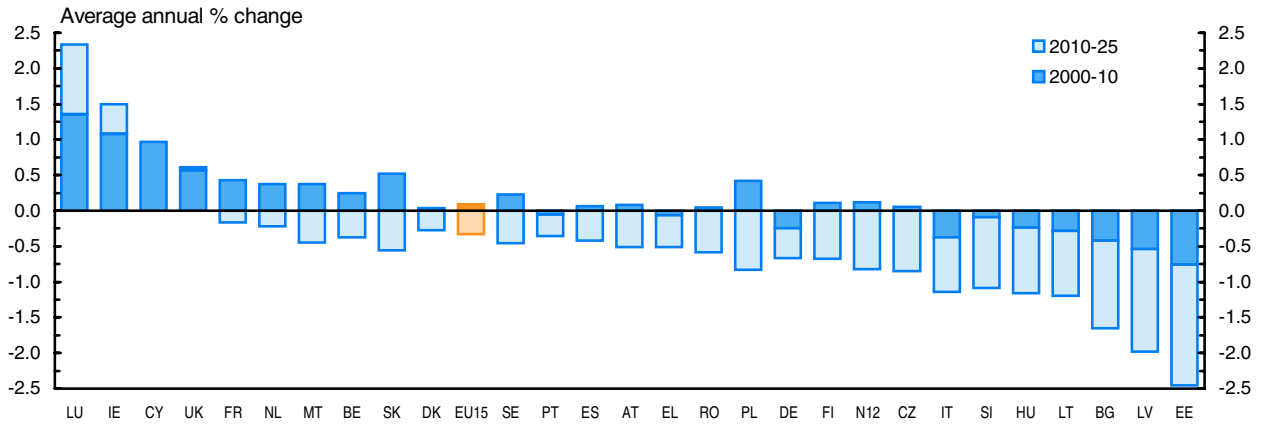
This widespread decline in working-age population will be accompanied by a marked shift in age composition. Those aged 50 to 64, many of whom are no longer working in many present and prospective Member States, will account for a growing share and young people coming into the labour market for a declining one.

By 2025, those aged 50 to 64 will account for 35% of population of working age in the EU15 as against 26% in 2000. In Italy, the share will rise to 40% and in Germany, Austria, Greece and Spain, to 36–37%. In the accession countries, the increase is projected to be smaller but still significant, the average share rising from around 26% to some 31%, but to 34% in the Czech Republic and 36% in Slovenia.

The fall in the number of people of working-age across Europe will be accompanied by a large and continuing increase in the number aged 65 and over — the typical official age of retirement. Up to 2025, population of this age is projected to grow by around 1½% a year in both the EU15 and the accession countries. As a result, the number aged 65 and over will be 40% higher in 2025 than in 2000 in both regions. In an EU of 27, only in the three Baltic States, Bulgaria and Romania will growth be below 1% a year. In Ireland, the Netherlands and Finland as well as Cyprus, Malta and Slovenia, population of 65 and over is projected to grow by 2% a year or more (Map A1.4).

Given these trends, increasing the number of people of this age who remain in work is of major importance from both an economic and social perspective and a key part of the European Employment Strategy. To be successful, this will require changes in policies and attitudes not only towards

1.8 Projected decline in working-age population, 2000-2025



Source: UN Demographic projections

early retirement but also towards the training of older people.

Rising old-age dependency rates

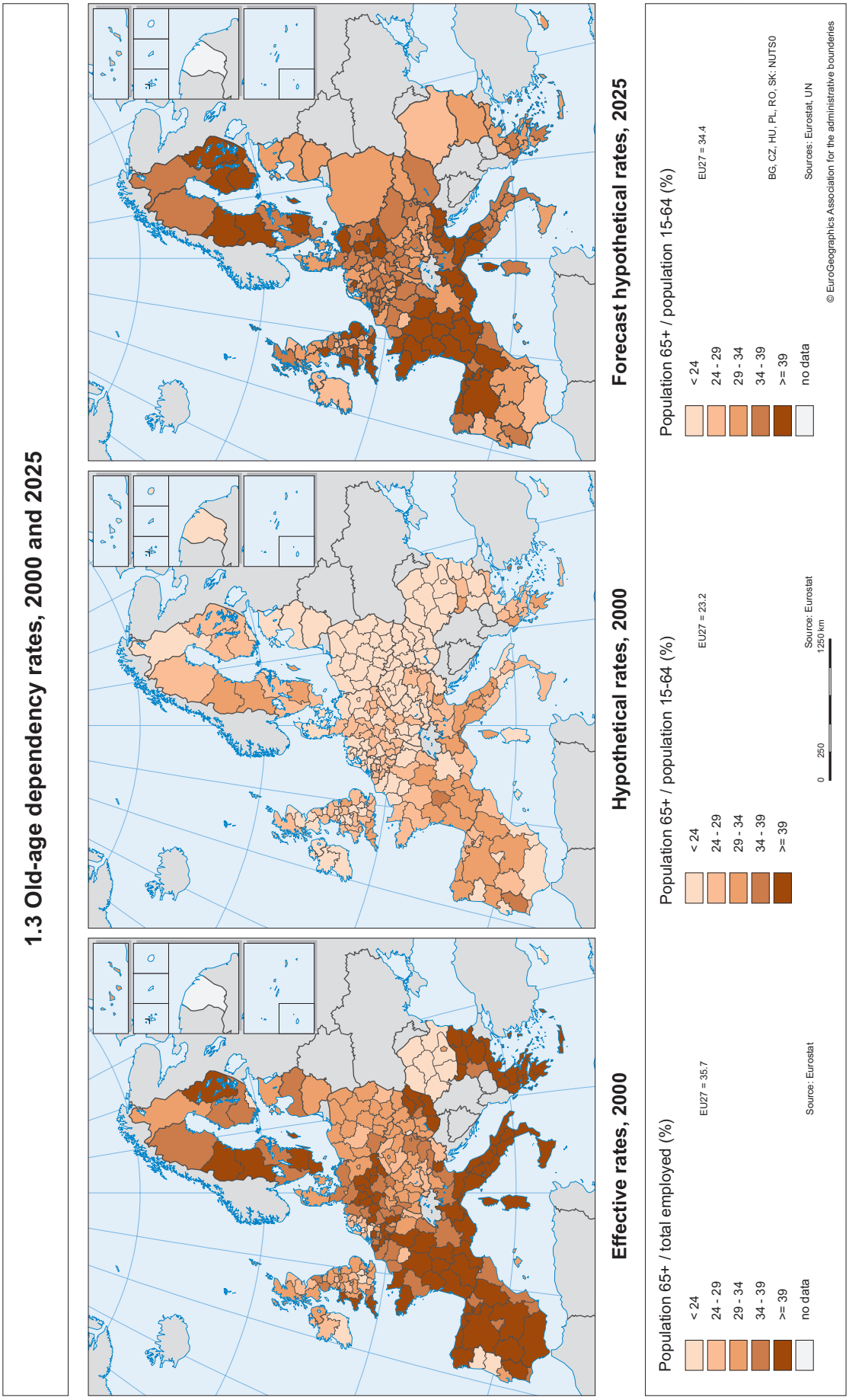
The implication of these divergent demographic trends is a large rise in old-age dependency rates, the number of people of 65 and over relative to those of working age. In the EU15, the population aged 65 and over amounts to almost 25% of that of working age — ie there are four people aged 15 to 64 for every one of retirement age. By 2025, the figure will rise to 36%, or less than three people of working-age for each one in retirement. In the accession countries, the rate is projected to increase from under 20% to over 30% during this period. Especially large increases are projected in Italy, Finland, Sweden and Germany, where the dependency rate is set to rise to around 40% by 2025. In the accession countries, the increase is expected to be particularly large in the Czech Republic, Malta and Slovenia, where rates of 36–38% in 2025 are projected as against under 20% in 2000.

By 2025, dependency rates are projected to exceed 40% in 42 regions; 12 of these in France, accounting for 42% of total population in the country. The lowest rates — below 25% — are forecast in several outermost regions, Açores, Madeira, Ceuta y Melilla, with small populations, though also in Ile de France (Paris) and London (Map 1.3).

And actual dependency rates?

Dependency rates calculated as above are informative but hypothetical, in the sense that they do not reveal how many people of working-age will be in employment to support those aged 65 and over in practice and not just in principle. As noted above, only 64% of those of working-age were actually in employment in the EU15 in 2002 and in the accession countries, only 56%. These figures, moreover, vary markedly between countries and regions.

For example, Italy and Sweden have similar dependency rates as measured above, but much lower employment in Italy means that its actual dependency rate is 30% higher than in Sweden. Already, therefore, there are only two people in employment in Italy to support every person of 65 and over, whereas in most other Member States, there are at least three. In Greece and Spain, however, as well as in Belgium, the number is less than 2½ (ie the actual dependency rate is over 40%). Even if the employment rate were to remain unchanged in the coming years, the actual dependency rate projected for 2025 in Denmark, the Netherlands, Portugal and the UK, as well as in


1.3 Old-age dependency rates, 2000 and 2025
Effective rates, 2000
Hypothetical rates, 2000
Forecast hypothetical rates, 2025
Population 65+ / total employed (%)
< 24
24 - 29
29 - 34
34 - 39
>= 39
no data
EU27 = 35.7
Source: Eurostat
Population 65+ / population 15-64 (%)
< 24
24 - 29
29 - 34
34 - 39
>= 39
EU27 = 23.2
Source: Eurostat
0
250
1250 km
Population 65+ / population 15-64 (%)
< 24
24 - 29
29 - 34
34 - 39
>= 39
no data
EU27 = 34.4
BG, CZ, HU, PL, RO, SK: NUTS0
Sources: Eurostat, UN
© EuroGeographics Association for the administrative bounderies

Ireland and Luxembourg, would be lower than the rate in Italy now.

In all the accession countries, except for Bulgaria, the actual dependency rate is below the EU average, despite the relatively small proportion of working-age population in jobs. If there is no substantial rise in employment in the coming years, however, the rate in many of the countries could rise above that in most existing EU Member States.

This emphasises the central importance of achieving a high level of employment in future years, supported by economic growth, if prospective demographic trends are not to lead to increasing social tension.

Higher employment coupled with a smaller number of people drawing pensions might occur as retirement patterns change and the health of the elderly continues to improve. In other words, it could well be the case that more people will choose to continue working beyond the present retirement age in future years. In this regard, it will become increasingly important to exploit the productive potential of older people.

There is a significant regional dimension to this insofar as demographic structure and trends vary markedly between regions as a result of differing patterns of mortality, fertility and migration. There is, therefore, a clear role for regional policy in, for example, mobilising older workers and exploiting their entrepreneurial and other skills, as well as in ensuring their access to training.

Social cohesion

Maintaining social cohesion is important not only in itself but for underpinning economic development which is liable to be threatened by discontent and political unrest if disparities within society are too wide. Access to employment is of key significance since it determines in most cases whether people are able both to enjoy a decent standard of living and contribute fully to the society in which they live. For those of working-age, having a job or being able to find one within a reasonable period of time is, therefore, invariably a precondition for social inclusion.

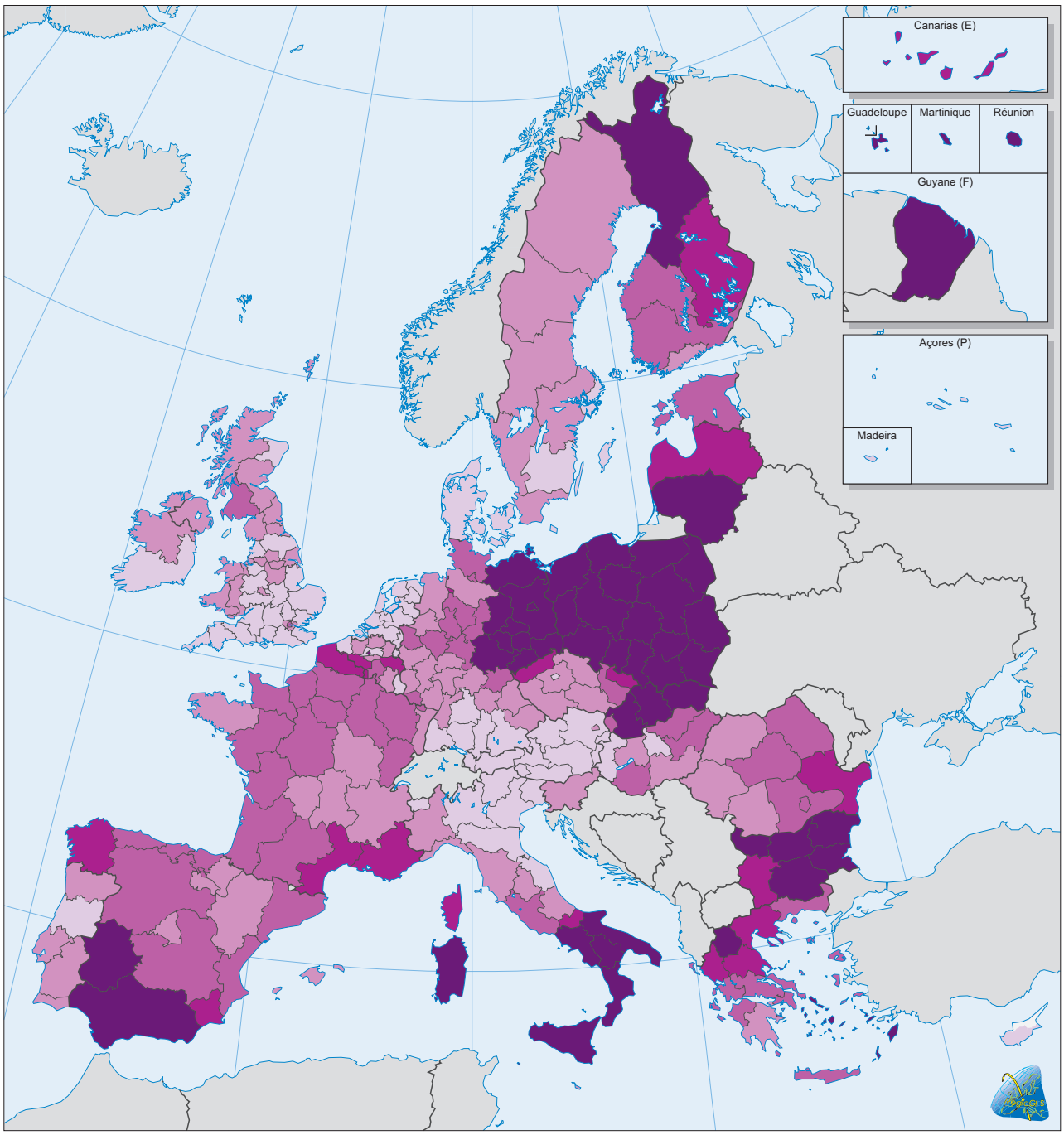
As indicated above, the proportion of those of working-age in employment has increased in most parts of the EU over recent years, contributing both to economic growth and to improving social cohesion. In the accession countries, by contrast, the proportion in jobs has tended to decline with the opposite effect. As described below, unemployment has, therefore, become a major problem in many of these countries. It also remains a problem in many parts of the EU15, despite the reduction which occurred from the mid-1990s up until the recent slowdown in growth.

As also described below, significant numbers of people in both the present Member States and the new ones have levels of income which put them at risk of poverty in spite of the extensive social protection system which exists in all the countries concerned.

Falling unemployment in most parts of the EU but disparities remain wide

The widespread fall in unemployment which accompanied job growth in the EU from 1994 up until the present slowdown was especially pronounced in Spain and Ireland, two Cohesion countries in which unemployment rates had been particularly high for many years. In Spain, the rate fell from 18% of the labour force in 1996 to 11½% in September 2003, the latest date for which figures are available, while in Ireland, the fall was of a similar size and reduced the rate to under 5%. Nevertheless, although unemployment is now well below the EU15 average in Ireland, in Spain, it remains well above the average (8%) and continues to be higher in Objective 1 regions in the country than elsewhere (in Extremadura and Andalucía, it was just over 19% in 2002).

In Portugal and Greece, moreover, there has been little change in unemployment. In Portugal, the rate fell from 7½% in 1996 to 5% in 2002 but it has since risen back to 7% as employment has fallen. This is still



1.4 Unemployment rates, 2002

% of labour force

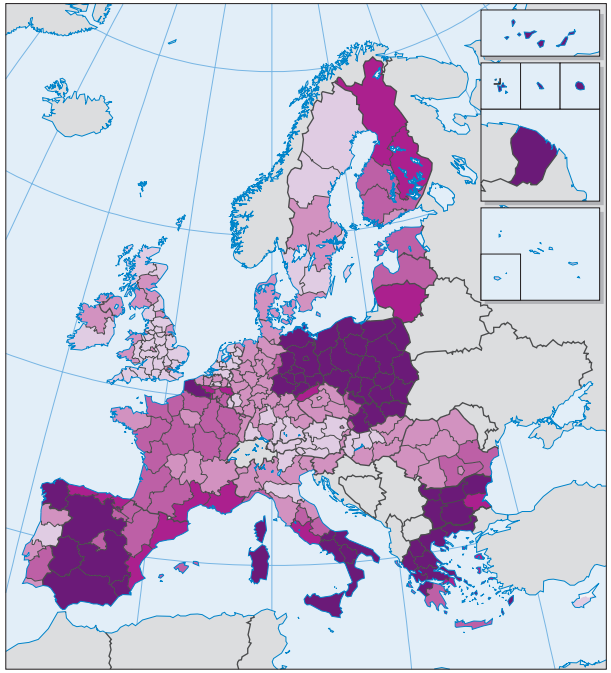
- < 4.75
- 4.75 - 7.65
- 7.65 - 10.55
- 10.55 - 13.45
- >= 13.45
- no data

EU27 = 9.1
Standard deviation = 5.86

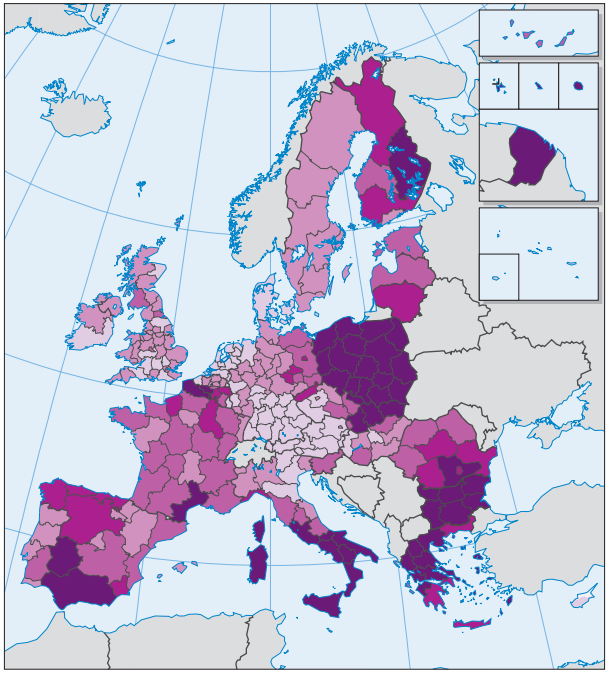
Sources: Eurostat and National Statistical Offices

0 100 500 km

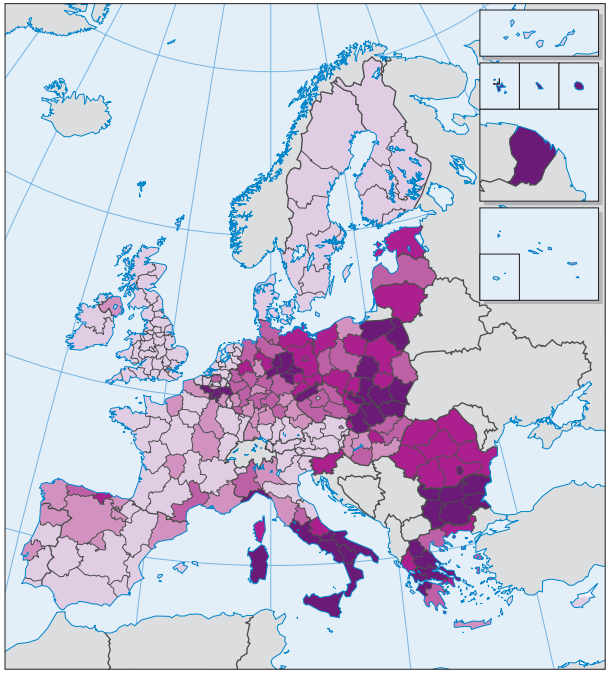
1.5 Unemployment, 2002



Female unemployment rates



Youth unemployment rates



Long-term unemployment

% of female labour force

- < 4.75
- 4.75 - 8.25
- 8.25 - 11.75
- 11.75 - 15.25
- >= 15.25
- no data

EU27 = 9.8
Standard deviation = 6.94

Sources: Eurostat and National Statistical Offices

% of youth labour force, 15-24

- < 9.25
- 9.25 - 15.55
- 15.55 - 21.85
- 21.85 - 28.15
- >= 28.15
- no data

EU27 = 18.6
Standard deviation = 12.52

Sources: Eurostat and National Statistical Offices

0 250 1250 km

% of total unemployed

- < 34.0
- 34.0 - 41.6
- 41.6 - 49.2
- 49.2 - 56.8
- >= 56.8
- no data

EU27 = 45.4
Standard deviation = 15.3

Source: Eurostat

below the EU15 average. In Greece, however, the rate has remained above the average at 10%, which is much the same as in 1996, though it has fallen steadily since 1999 when it reached a peak of 12% (Table A1.5).

In Objective 1 regions elsewhere, unemployment was over 20% in 2002 in most of the new German Länder, reflecting a fall in employment since the mid-1990s, while in Italy, where job growth has been depressed, it was close to 20% in the Mezzogiorno, nearly three times higher than in the rest of the country (and almost 25% in Calabria) (Map 1.4). In southern Italy, moreover, the problem of joblessness is only partly revealed by the unemployment figures since a substantial number of people of working age, women especially, do not even join the labour market.

In regions where unemployment is high, it remains the case that young people and women are particularly affected and those becoming unemployed tend to be out of work for a long time (i.e. there is a positive relationship between the overall unemployment rate and the long-term rate — the relative number out of work for one year or more — Map 1.5).

Unemployment a major problem in the accession countries

The low employment rates in the accession countries which were noted above are reflected in high rates of unemployment. At the latest count, in September 2003, unemployment stood at 20% of the work force in Poland, 16% in Slovakia and 14% in Bulgaria, while in both Latvia and Lithuania, the rate was also well over 10%. By contrast, the rate was only just over 4% in Cyprus, as well as in Romania, lower than in any existing Member State except Luxembourg and the Netherlands.

At the regional level, unemployment was over 25% in four Polish regions in 2002, as well as in one Bulgarian region, and over 20% in another four, as well as in two Slovakian regions.

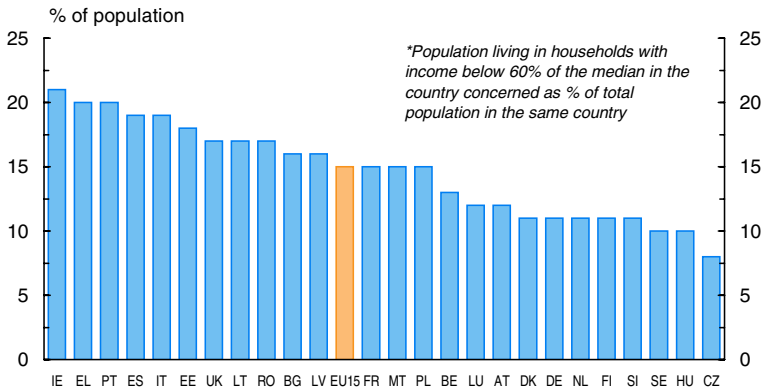
The risk of poverty varies between countries and household types

Although there are no measures of the number of people across the enlarged EU who live in poverty in an absolute sense, an indication can be gained of those whose income is low enough to put them at risk of being socially disadvantaged in a relative sense.

According to the latest data (for 2000), the proportion of the population at risk of poverty, defined in terms of those living in households with income below 60% of the national average after social transfers,[7] ranges from 21% in Ireland, and only slightly less in Greece and Portugal, to 10–11% in the Netherlands, Sweden, Germany, Denmark and Finland (Graph 1.9 and Table A1.6).

Poverty is closely linked to unemployment. Being in employment is by far the most effective way of avoiding the risk of poverty and social exclusion. Only 7% of the employed population in the EU had income below the poverty line in 2000, as against 38% of the unemployed and 25% of the inactive.

1.9 Population at risk of poverty*, 2000



LT, MT, SI: data are for 1999; CY, SK: no data available.

Source: Eurostat, ECHP, 2003 and national sources

However, even if those in employment are less exposed to the risk of poverty, they represent around a quarter of the people aged 16 and over in the EU in this position.

The risk of poverty is higher for particular household types in most countries, in particular for older people living alone and lone parents[8]. In the EU Member States taken together, some 35%, on average, of those living alone with dependent children — the vast majority of whom are women — and almost 30% of people of 65 and over living alone have income below the poverty line.

Wide variations exist across the Union as regards the nature, as well as the scale, of the problem of low income. In the southern countries, apart from Greece, the problem is related to having children, which is also the case in the Netherlands as well as in the UK for lone parents in particular. In the Nordic countries, it is mainly associated with living alone, while in Ireland and Portugal, it is a particular problem among those of 65 and over (Table A1.7).

The risk of poverty and social exclusion is also important in the new Member States. This risk threatens to increase if unemployment remains high.

The risk of poverty affects ethnic minorities in particular who tend to be disadvantaged on the labour market. In some cases, these face cumulative handicaps in terms of access to education, social services, housing and health care. Most accession countries have significant ethnic minorities. The size of the Roma community in the EU, for instance, will double with the accession of the 10 new Member States in 2004 and will double again with the accession of Bulgaria and Romania.

Methodological notes — Measuring changes in GDP per head over time

In previous Cohesion Reports, the extent of convergence of GDP per head has been assessed by taking successive estimates of this in different countries and regions measured in terms of purchasing power standards (PPS) in order to adjust for differences in the goods and services which a given unit of GDP is capable of purchasing. The adjustment for PPS is made annually in relation to the pattern of consumption and investment prevailing at the time. The fact that these patterns may change over time is a reason for being cautious about comparing levels of GDP per head between two different years. The problem is compounded by the fact that changes have been made over time in the method used for estimating relative price levels, partly because of ongoing efforts to improve the estimates produced. As a result of these changes, GDP in terms of PPS cannot legitimately be compared between years.

According to the EU Statistical Office (Eurostat), therefore, 'the years before 2000 …include a multitude of minor or major breaks in the time series, which negatively affect the comparability over time or even between countries within one given year' (Statistics in Focus, Theme 2, 56/2002). In consequence, while it is legitimate to compare estimates of GDP per head in PPS terms in a recent year across countries, it is problematic to compare these levels over time. The approach used here for assessing both national and regional convergence is to measure changes in GDP per head over time in real terms (ie at constant prices), which explicitly adjusts for price changes between years.

Measuring the regional economy

As described in the Second Cohesion Report, GDP per head, expressed in terms of purchasing power standards (PPS) to adjust for differences in price levels, is the primary indicator for assessing the development of economies, whether national or regional. It is used not just in the EU to measure disparities between regions and to identify those which warrant assistance from the Structural Funds, but by other international institutions (UN, World Bank, IMF, OECD and so on), national governments, central banks and research institutes for similar assessments of economic development.

As made clear in the Second Cohesion Report, it is not a perfect measure and has a number of weaknesses. These include, in particular, the problem of commuting (the fact that commuters may contribute to GDP produced in an economy or region in addition to the people living there but are not included in the 'heads' to which GDP is related) and the exclusion of transfers which may add to, or subtract from, income. They also include problems of adjusting for price level differences, which are not captured by exchange rates, and for environmental degradation as well as the depletion of exhaustible resources which are left out of account entirely. Nevertheless, given the data which at present exist and the conceptual difficulties which remain to be resolved, it remains, by common consent, the best measure available.

These weaknesses, however, continue, quite rightly, to prompt economists and statisticians to seek other indicators as well as ways of improving the existing measure. Two developments since the Second Cohesion Report are considered here: first, the construction of preliminary estimates of disposable income across EU regions by statisticians at Eurostat and, secondly, the efforts made to improve the PPS adjustment.

Regional disposable income

Estimates of disposable income for NUTS 2 regions have recently been published by Eurostat, the results of a preliminary exercise undertaken with the aim of comparing regions in terms of whether they are 'rich' or 'poor'[9]. The aim, therefore, is to measure the income available in different regions for those living there to dispose of. This is somewhat different from measuring GDP or the output produced, which is perhaps a better indicator of regional economic performance. As explained in the Second Cohesion report, therefore, 'a region which (has) a low level of production might well have a (relatively high) level of final income because of large social security transfers, but it would still be a less favoured region'. This is the reason why GDP is used by the EU to determine a region's need for structural assistance rather than some measure of income.

A further motivation for attempting to estimate disposable income was to overcome the commuting problem

which is a difficulty inherent in the regional statistics of GDP per head, though it is more of problem of the population data used to measure heads rather than of GDP as such. Since the focus of the exercise was on income rather than output, transfers to and from regions were also included in the measure.

In practical terms, as the Eurostat exercise makes clear, trying to measure disposable income gives rise to serious estimation problems given the data at present available. In particular, data for primary household income, which is a basic component of the indicator, do not as yet exist at NUTS 2 regional level for a number of countries. Data problems are particularly acute for the government sector and the company sector which with households make up the regional economy. In both cases, a lack of information on the way income varies between regions means that assumptions have to be made about this in order to generate overall estimates of disposable income. The assumptions adopted, that disposable income in both sectors is the same in relation to population in all regions, are the simplest ones to make but are unlikely to accord with reality. (For the government sector, the data presented on public expenditure in different regions in Part 2 of this report below indicate the significant regional variations which occur in practice.)

The results of the exercise, therefore, as acknowledged by Eurostat, need to be interpreted with caution, though they might be indicative of the differences in disposable income which exist between regions across the EU. While not a replacement for regional GDP per head, the estimates, could provide a useful complement to this, once they are more soundly based, especially as they allow for the distorting effects of commuting.

The PPS adjustment

As noted above, the PPS adjustment has been subject to change which means that the GDP per head figures expressed in these terms cannot be compared over time. While this is an inherent problem where expenditure patterns change between years, there is a further difficulty with the PPS adjustment applied to regional comparisons of GDP per head. This is that, at present, the adjustment is limited to correcting for differences in price levels between countries, whereas differences across regions within countries may be equally, if not more, important. Certain prices, therefore, especially for housing, vary markedly between regions in the same country, reflecting relative levels of prosperity, differences in market characteristics and so on. As such, taking account of regional price variations might well serve to reduce disparities in GDP in PPS terms between regions, though the extent to which this is the case must await the estimation of regional PPS figures. Despite the potential importance of this exercise, little progress has been made in developing such estimates since the publication of the Second Cohesion Report.

Changes in NUTS 2 regional classifications

In May, 2003 the European Parliament and the Council adopted a Regulation (EC) N° 1059/2003 on the establishment of a common classification of territorial units for statistics (NUTS) introducing changes in the classification of regions in Finland, Portugal, Germany, Spain and Italy, and specifying that 'the Member States concerned shall transmit to the Commission the time series for the new regional breakdown'. Data on GDP for 2001 in the regions concerned were published by Eurostat at the beginning of 2004, but other statistical indicators at regional level are still missing.

In the present report, data on the basis of new regional breakdown are included for GDP and population but data for the other regional indicators for which data are not yet available, such as for employment, are on the basis of the old breakdown.

Territorial cohesion

A central aim of the EU, as set out in the Treaty (Article 2) is 'to promote economic and social progress and a high level of employment and to achieve balanced and sustainable development, in particular through the creation of an area without internal frontiers, through the strengthening of economic and social cohesion and through the establishment of economic and monetary union...'. This implies that people should not be disadvantaged by wherever they happen to live or work in the Union. Territorial cohesion has therefore been included in the draft Constitution (Article 3), to complement the Union objectives on economic and social cohesion. Its importance is also acknowledged in Article 16 (Principles) in the Treaty which recognises that citizens should have access to essential services, basic infrastructure and knowledge by highlighting the significance of services of general economic interest for promoting social and territorial cohesion.

The concept of territorial cohesion extends beyond the notion of economic and social cohesion by both adding to this and reinforcing it. In policy terms, the objective is to help achieve a more balanced development by reducing existing disparities, avoiding territorial imbalances and by making both sectoral policies which have a spatial impact and regional policy more coherent. The concern is also to improve territorial integration and encourage cooperation between regions.

There are a number of aspects of territorial balance in the EU, which threaten the harmonious development of the Union economy in future years:

- at EU level, a high concentration of economic activity and population in the central area or pentagon (which stretches between North Yorkshire in England, Franche-Comté in France, Hamburg in northern Germany and Milan in the north of Italy), which was identified in the second Cohesion Report and which covers 18% of the EU15 land area while accounting for 41% of population, 48% of GDP and 75% of expenditure on R&D. Enlargement will only increase this degree of concentration by adding to the EU land area and population but increasing GDP relatively little;

- at national level, a persistence of pronounced imbalances between the main metropolitan areas and the rest of the country in terms of economic development, which is a particular feature of the accession countries;

- at regional level, a widening or, at least, the persistence of a number of territorial disparities beyond those measured by GDP or unemployment. In particular, economic development is accompanied by growing congestion and pollution and the persistence of social exclusion in the main conurbations whereas a number of rural areas are suffering from inadequate economic links with neighbouring small and medium-sized towns and their economies are often weakening as a result. Large urban areas are tending to sprawl outwards encroaching into the surrounding countryside as economic activity and their population increase, creating what have become known as 'rurban' areas, while rural areas where there are no towns of any size are experiencing falling population and a decline in the availability of basic services;

- within regions and cities, the development of pockets of poverty and social exclusion in areas with often only limited availability of essential services;

- in a number of specific areas constrained by their geographical features (islands, sparsely populated areas in the far north, and certain mountain areas), population is declining and ageing, while accessibility continues to be a problem and the environment remains fragile, threatened, for example, by regular fires, droughts and floods;

- in outermost areas, with a cumulation of natural and geographical handicaps (as recognised in Article 299.2 of the EU Treaty), the continuation of severe social and economic problems which are

difficult to tackle because of their remoteness, isolation, topological features, climate, small size of market and dependence on a small number of products.

These territorial disparities cannot be ignored, since apart from the serious difficulties in peripheral and outermost areas or the problems of congestion in certain central areas, they affect the overall competitiveness of the EU economy. Covering costs of congestion or treating the social consequences of disparities implies a sub-optimal allocation of resources, as well as a lower level of efficiency and economic competitiveness than could potentially be attained in the regions affected, whether they are attractive areas in the centre or deprived areas on the periphery. These problems can set in motion a cumulative process in which, for example, difficulties of accessing centres of research and innovation or ICT networks further reduce the economic development potential of regions which are already lagging.

To combat territorial disparities and achieve a more spatially balanced pattern of economic development requires some coordination of development policies if they are to be coherent and consistent with each other. It was for this reason that the European Council in Potsdam in 1999 defined the European Spatial Development Perspective.

Promoting balanced development

Territorial imbalances in the distribution of towns and cities

Urban systems are the engines of regional development and it is in regard to their geographical distribution across the EU that an imbalance between the centre and the periphery is most evident. An analysis of these systems, of their potential and the extent of cooperation between them, reveals the following tendencies[10]:

- growth is still occurring in the core parts of Europe and in capital cities where company headquarters, research activity and education and cultural facilities are concentrated (London, the large Dutch urban areas and north-west German cities are still recording significant increases in population). Over 70 cities or conurbations, 44 of which with more than 1 million people, provide all these major strategic functions and can be regarded as growth 'metropoles' of European importance. An arc stretching from London to Milan and passing through the conurbation consisting of cities along the Rhine (Essen and Cologne) is particularly important among these cities;

- in the accession countries, despite declining population, there is a significant growth in capital cities, particularly Budapest, Prague, Ljubljana and the capitals of the Baltic States. The only exception is Poland where there are five large metropolitan areas to rival Warsaw;

- the appearance of new tendencies involving less polarised development and the growth of a number of urban areas in peripheral parts of the EU, including:

  - an extension of the core towards the east with growth of cities such as Berlin, Munich and Vienna;

  - capital cities in Scandinavia, Stockholm and Helsinki, in particular, have become strong economically especially in new technology;

  - a number of urban areas in peripheral parts of the EU, such as Dublin, Athens and Lisbon, have also experienced significant growth in GDP per head over the past decade;

- a number of urban regions located outside the core seem to have a population and an economic potential strong enough to attract research activity and to link up over time with the main European, and even international, centres of decision-making. These appear to be capable in the future of stimulating the growth of peripheral areas and

Marked disparities between and within cities

The Urban II Audit, available at present for 189 cities in the EU15 (65 in the central pentagon and 124 in peripheral areas), enables three kinds of disparity to be analysed — those between cities in the centre and periphery, between large and medium-sized cities and between inner city areas. The main findings are as follows:

- lack of security is more marked in bigger cities than in medium-sized ones. In the UK, for example, the number of cases of violent assault is twice as high in large as in medium-sized cities and the number of murders three times higher. It is equally more marked in cities in the central part of the EU than in the periphery;
- pollution shows a clear centre-periphery pattern, with, for example, cities in the centre having 14 days of peak ozone levels a year as against less than one day a year for those in the periphery;
- unemployment seems to be related more to national factors than whether cities are in the centre or periphery or their size. The same is true of poverty (though the proportion below the poverty line averages 9% in the central areas and 16% in the peripheral ones). At the same time, there are wide disparities between different areas within cities, with, for example, a difference in the unemployment rate of 8 to 1 in Porto where the average rate is low and 5 to 1 in Marseilles where it is high.

of bringing about a better balance of economic development in the EU.

Some 40 such urban regions, situated outside the core 'pentagon' can be identified and categorised in terms of four criteria which indicate their strengths and weaknesses — their population size and its growth, their competitiveness, their communication links and their involvement in the knowledge economy. Lyon, for instance, is a good example of a city strong in terms of all four criteria, while Bilbao scores highly on one (knowledge) and Porto and Krakow have only an average score on the four taken together. Overall, these 40 urban regions showed a growth of GDP between 1995 and 2000 of 3.3% to 4.1% per year as against 3% for the growth metropoles and 4–5% for a number of peripheral urban regions which are developing rapidly, as noted below.

Analysis of cooperation networks between towns and cities indicates the existence of:

- a strong network of major 'metropoles' in the centre of Europe (in terms of trade, universities and communication links), including London, Paris, Frankfurt, Amsterdam, Milan and, in the near future, Berlin;
- outside of this group, a lack of strategic cooperation between towns and cities and in the accession countries, an absence of networks of small and medium-sized towns, except in the Czech Republic and Slovenia.

Intra-regional imbalances

The future of rural areas is increasingly tied up with the development of the rural economy as a whole and, in some cases, requires a real change in the economic and social base, in physical infrastructure, access to ICT and other new technologies, the growth of new sources of employment (such as in SMEs or rural tourism) and the maintenance of public services. Such a policy needs to be integrated into a regional strategy involving the development of economic relations and cooperation with urban areas.

The challenge facing rural areas varies according to where they are located in relation to the cities identified above: It is possible to distinguish in broad terms three types of rural area according to the extent of their integration into the rest of the economy and their links with large centres of activity:

- areas integrated into the global economy which are experiencing economic growth and

have increasing population. They are situated in general close to an urban centre, employment is in manufacturing and services, but most of the land is used for agriculture (in France, for example, a third of farms are situated in such areas). The high population growth and pressure from urbanisation mean there is a need for better management of land use to avoid environmental degradation and conflicting usage. Despite the growing importance, urban policies in Member States, except in the UK and Sweden, tend not to take sufficient account of relations between urban and rural areas;

- intermediate rural areas relatively far from urban centres but with good transport links and reasonably well developed infrastructure. They tend to have stable population and to be in the process of diversifying economically. In a number of Member States, large farms are situated in these areas. The need is to maintain their agricultural potential, increase the pace of economic diversification and strengthen relations with small and medium-sized towns;

- isolated rural areas, sparsely populated and often situated in peripheral areas, far from urban centres and main transport networks. Their isolation is often due to their topographical features (such as a mountain range) and they tend to have an ageing population, poor infrastructure endowment, a low level of basic services and income per head and a poorly qualified work force and to be not well integrated into the global economy. Their population is generally dependent on agriculture to a large extent and in decline. They are located largely in south-west Portugal, the north and north-east of Spain, central France, Scotland, Finland and Sweden. The challenge is one of revitalisation and to maintain economic activity and the availability of adequate public services. And there is a need to develop links with towns even if they are relatively far away.

Regions with geographical handicaps

As noted above and highlighted in the Second Cohesion Report, regions with specific and permanent geographical features which constrain their development, such as the most remote regions, islands, mountain regions and sparsely populated areas in the far north of Europe, have special problems of accessibility and integration with the rest of the EU.

The seven outermost regions of the EU encompass 25 islands plus Guyane and together have a population of around 4 million. They suffer from an accumulation of natural handicaps, which make it difficult to improve economic and social conditions, not least their remoteness both from economic and administrative centres and the nearest mainland. The furthest away, Réunion, is over 9,000 kms from Paris and 1,700 kms from the coast of Africa, while the closest to land, the Canarias, are still 250 kms off the coast. Their remoteness is compounded by their natural features (many are archipelagos, small in terms of land area and population), difficult terrain and climate.

Excluding the Canarias (which accounts for almost 45% of the total population of the 7 outermost regions and where GDP per head was only 6% or so below the Spanish average), GDP per head is only 57% of the EU15 average and Réunion, Guyane and the Açores feature among the 10 least prosperous regions. All suffer from a combination of lagging economic development, excessive reliance on agriculture and high unemployment, but while population is still increasing markedly in the French territories, it is declining in Madeira and Açores, which have a high rate of outward migration. The Canarias, moreover, are experiencing pressure from population growth, have an over-dependence on tourism and a lack of diversification into other activities.

In addition to these, there are 284 populated islands in the EU15, with 9.4 million people (3% of the EU15 total) and a land area of 95,000 square kms (3% of the EU15 total). The economic development of these is permanently constrained by their relative isolation and

the added costs which this entails. Moreover, in many cases they have a mountainous terrain and/or are part of lagging peripheral regions, such as those in the Italian Mezzogiorno, Greece or Scotland. Many are also part of an archipelago which, in most cases, tends to act as a further constraint insofar as transport connections with the mainland and public services are located on the main island.

Islands are distributed fairly evenly between the Atlantic, Baltic and Mediterranean, though the 119 islands in the last account for 95% of their total population, with 85% living on Sicilia, Sardegna, the Illes Balears, Kriti and Corse. The islands elsewhere, by contrast, tend to be smaller and more sparsely populated. The only ones of any size are the Swedish island of Gotland, the Scottish islands of Lewis and Harris and the main island of Orkney. Their average GDP per head in 2001 was 72% of the EU15 average and in most cases (the Illes Balears are the main exception) lower than in other parts of their respective countries. They tend to be vulnerable in economic terms because of the concentration of activity in two broad sectors — agriculture and fishing and tourism.

Mountain areas are spread across the EU15, covering 40% of the land area and having a population of some 67 million, or around 18% of the EU15 area. After enlargement to EU25, they will account for much the same proportion of population but a slightly smaller proportion of the land area since in the new Member States population density in mountain areas is slightly higher than in other regions. Mountain areas are more dependent on agriculture than other areas particularly in the accession countries, but also in the EU15. Although a number of mountainous areas are located close to economic centres and large markets, because of the terrain, transport costs tend to be high and many agricultural activities unsuitable.

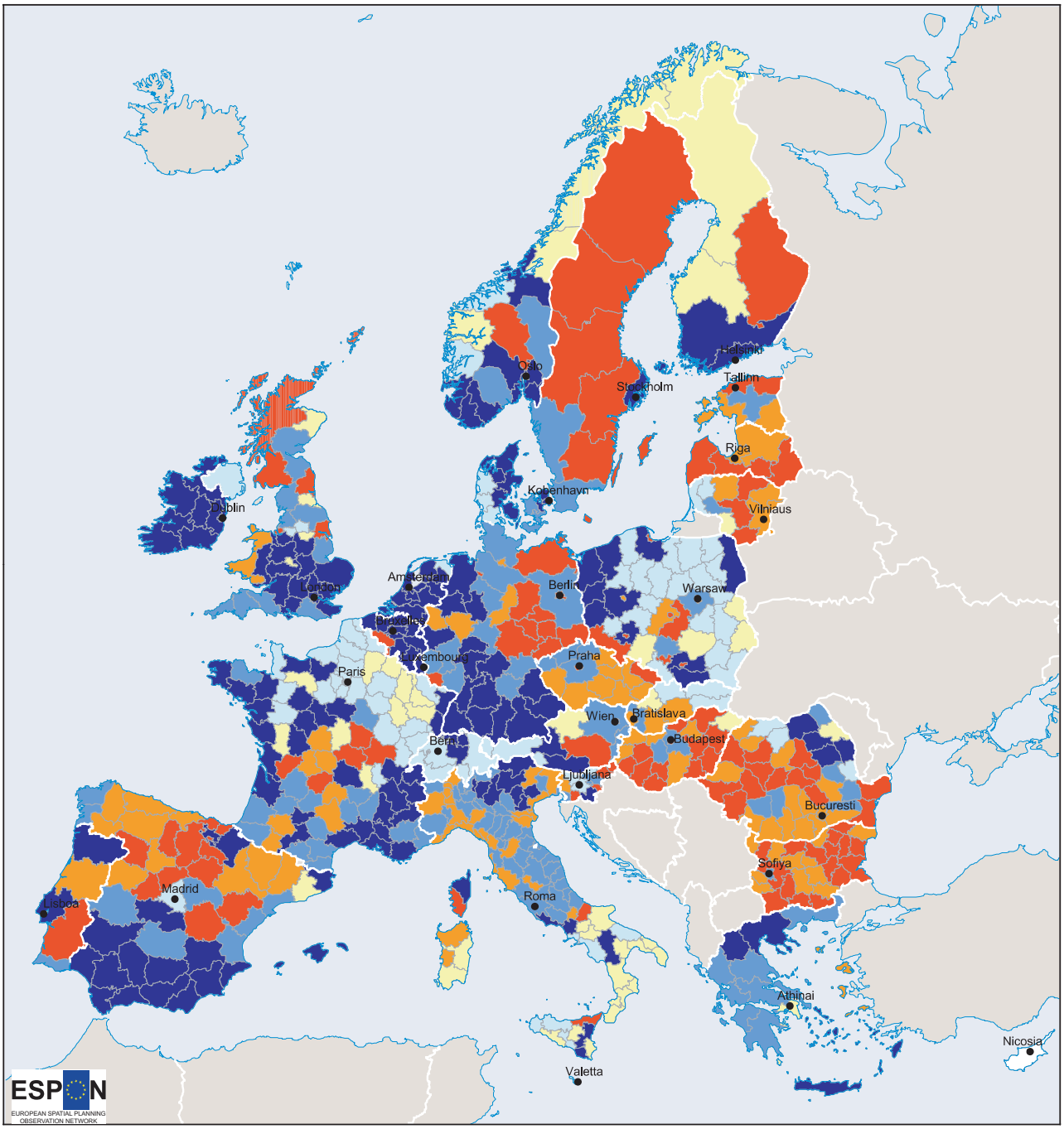
Unemployment tends to be higher in mountain areas which are the most peripheral, such as the northern parts of the Nordic countries, Scotland, Northern Ireland and the UK, the southern mountain ranges of Spain, Corse, southern Italy and Sicilia. Conversely unemployment is for the most part relatively low in mountain areas near to major industrial urban centres or which have such centres within their borders, such as the areas in Wales, the northern Apennines of Italy and along the northern and southern edges of the Alps in France, Germany and Italy. There are, however, exceptions, such as the Ardennes in Belgium and the Ore mountains in the Czech Republic and Germany.

Though further research is required, the conclusions from the studies which have been carried out suggest that economic diversification from agriculture to services tends to happen at a faster pace in lowland than in mountainous regions, that the existence of large cities in mountain areas or nearby give an important stimulus to industrial activity (or, alternatively, that the wealth of resources in mountain areas can lead to the development of large cities in their vicinity), and that service employment tends to be high in the more prosperous mountain areas, mainly in tourism (such as in the Alps) or in public services in sparsely populated areas (especially in Sweden and Finland).

Since Finland and Sweden joined in the EU in 1994, sparsely populated areas have become an issue for cohesion policy. Parts of the sub-arctic and arctic in these two countries, have an average population density of under 5 inhabitants per square km, well below the level anywhere else in the Union, except in the Highlands and Islands of Scotland[11].

The average GDP per head in these areas is 87% of the EU average, significantly lower than in other parts of their respective countries. Unemployment also tends to be above the national average. In general, a large proportion of employment is in services, especially public services, in Sweden, while in Finland, more people work in agriculture and industry, especially wood, pulp and paper.

In the Swedish regions, in particular, GDP growth has been depressed since the mid-1990s (the growth rate being only around half the EU average) and employment has not recovered from the substantial job losses suffered during the recession years of the early



1.6 Change in population, 1996-1999: main components

Population increase with

- positive migratory balance and positive natural balance
- positive migratory balance and negative natural balance
- negative migratory balance and positive natural balance

Population decrease with

- negative migratory balance and positive natural balance
- positive migratory balance and negative natural balance
- negative migratory balance and negative natural balance

- no data

AT, CH, DE, FI, EL, MT, NL, PT, SE, UK: NUTS2

Source: ESPON Data Base
Origin of data:
EU15 and N12: Eurostat;
Norway and Switzerland: National Statistical Offices

This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

0 100 500 km

1990s. Population is generally declining, at a rate which elsewhere is usually found only in regions with serious structural problems. During the 1990s, Kainnu and Lappland in Finland lost an average of 1% of their population annually while in Norrbotten in Sweden, population fell by 0.6% a year[12] (Table A1.8).

Common problems of areas with geographical handicaps

All of these regions, in whichever part of the EU they are located, have common problems of accessibility and of remoteness from major markets which tend to add to both travel and transportation costs and constrain their economic development. At the same time, the construction of infrastructure of all kinds and the provision of health care, education and other basic services is usually also more costly, because of the nature of the terrain and the remoteness of the location, and more difficult to justify because of the small numbers of people being served. In many cases, the population, or size of the market, is below the 'critical mass' required to warrant investment in economic terms. This problem is compounded by an ageing and declining population as young people leave (Map 1.6).

For islands, there seems to be a critical size of population of around 4–5,000 inhabitants, above which numbers are usually expanding, there is a relatively large proportion of young people and education and health care facilities are good. Below this level, net emigration, population ageing and inadequate facilities are the norm.

In mountain areas in the EU15, population density (51 inhabitants per square km) is less than half the EU average, though in immediately surrounding areas it tends to be much higher, reflecting their relative attractiveness as places to live and work. On average, there is an ongoing decline in population, but a number of areas have begun to attract people and new businesses. In the accession countries, the picture is similar, though population density in such areas is almost twice that in the EU15 and only slightly below the average elsewhere.

Accessibility of mountain areas

As part of a recent study of mountain areas, an index was constructed to classify these according to their accessibility, taking account of their distance by air from national capitals and other cities and from universities and health care facilities, as well as of the density of transport networks (roads, railways and airports).

Mountain areas with 'very good' or 'good' accessibility are located, for example, in the north of England, Sicilia and Slovakia. They also include the Alps, the Carpathians, the Sudetes, all the German areas and the Ardennes, as well as three Spanish and two Portuguese areas. Areas with a 'fair' accessibility encircle the first two groups. These include areas in Greece, Spain, Wales and Finland and the 'Massif Central' in France. Areas with 'poor' accessibility are found north of the third group, in particular, Highlands and Islands in Scotland and most Swedish and Finnish mountain areas.

More equal access to Services of General Economic Interest

Despite the difficulties of some regions, equality of access to basic facilities, essential services and knowledge — to what are termed 'Services of General Economic Interest' — for everyone, wherever they happen to live, is a key condition for territorial cohesion.

Access to an efficient transport system with adequate links to the core area of the Union is the first determinant of a region's peripherality. Regions with better access to markets are likely to be more productive and more competitive than others. At present, the road network tends to be much more developed in the central parts of the EU than in peripheral regions and while construction of motorways in recent years has increased, the accessibility by road for the latter to central areas where markets are concentrated remains very much less than elsewhere. It is particularly poor in most Objective 1 areas in Portugal, Greece, the west of Ireland and the Baltic States (Map A1.5).

The same is even more the case as regards rail since the network in general has not even kept pace with road improvements in most peripheral regions. Romania, Bulgaria, south and central Italy and the north of Denmark as well as Greece and parts of Spain away from the Madrid-Seville TGV have especially poor accessibility to more central areas of the EU by rail (Map A1.6).

Accessibility to central regions by air is significantly better because of the presence of international airports even in the most remote areas, though the improvement in connectivity through this means needs to be put into perspective given the small amount of goods which are generally transported by air (Map A1.7).

Although the construction of the trans-European networks will improve accessibility, particularly in the accession countries — Bulgaria and Romania, most especially — the effect will vary considerably between different regions on the periphery depending on how well they are connected to the main routes, which depends in turn on the state of secondary networks.

Access to new technologies, especially ICT, is particularly important for peripheral regions and those with geographical handicaps. This is not only because they serve to reduce the significance of distance and the time required to reach central areas of the EU, but, more critically, because any limitation on their availability is almost certain to damage their development prospects and deter businesses from locating there.

Development priorities

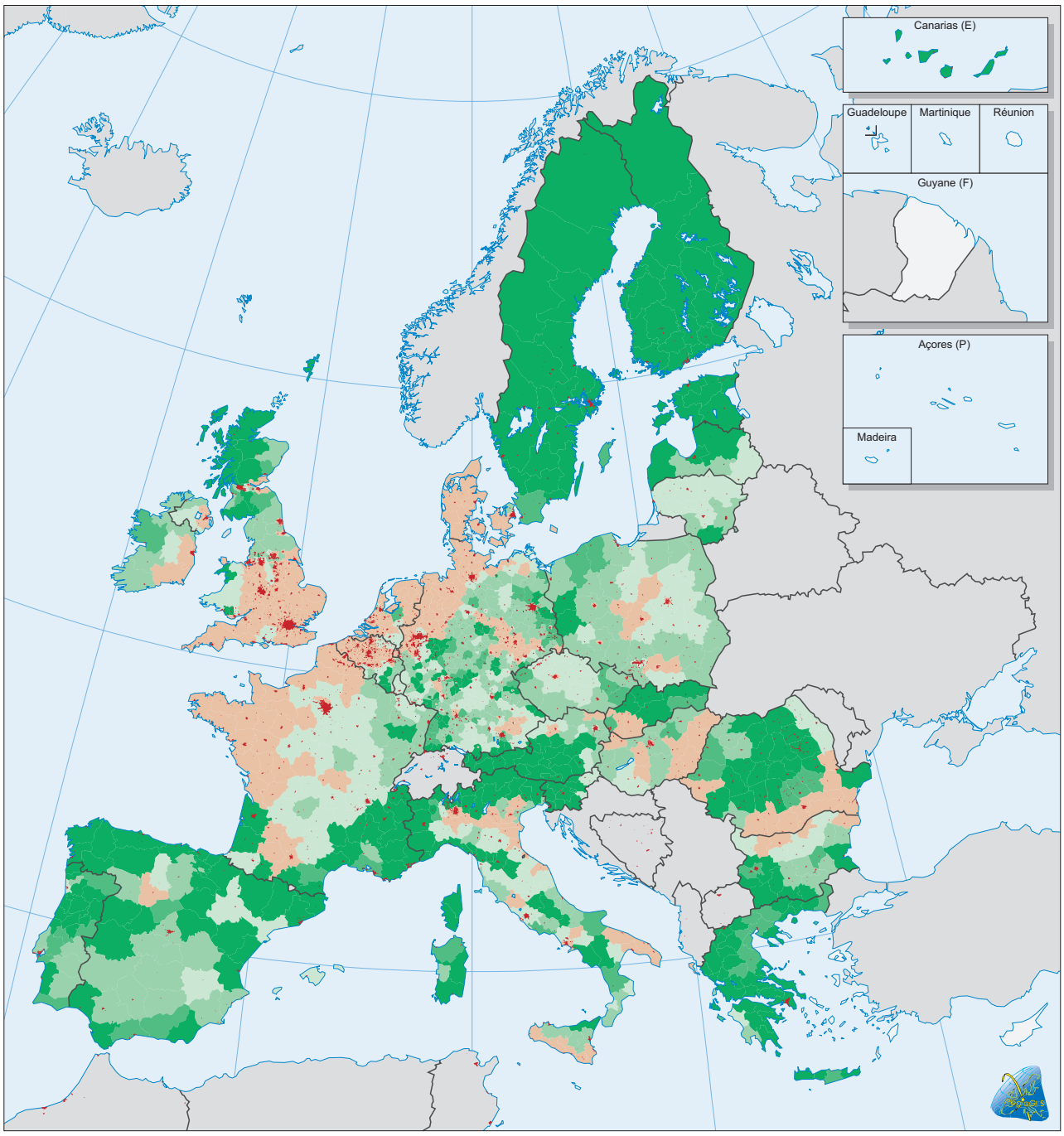
Although economic and social conditions vary greatly in regions with geographical handicaps, they typically are less prosperous and have higher unemployment than the country in which they are located or, in the case, of the outermost regions, to which they belong. Nevertheless, the latter regions apart, both GDP per head and employment are inevitably influenced by the economic performance of the national economy of which they form part.

Geographical handicaps do not always mean unfavourable economic circumstances. Indeed, as a number of examples demonstrate, they can potentially be transformed into positive assets which can open up new paths of development. Additionally, many of these regions form an important part of the EU's natural heritage and are the location for many leisure, cultural and other activities. For this reason alone, it is important that they are preserved and remain populated, which means that it is important in turn to improve their accessibility and to maintain or develop essential services.

It is equally important that the economic development path they follow respects their natural heritage and does not endanger the very geographical features which are, or can be, a key aspect of their comparative advantage as locations not only for people to live but also for businesses to operate. As the knowledge-based economy develops, therefore, proximity to raw materials or even to large markets is becoming a less significant determinant of location and the attractiveness of natural and physical surroundings of increasing importance — allied, of course, to the availability of the essential services and facilities described above.

The economic development of these sensitive areas, therefore, even more than elsewhere, must take account of the need to safeguard the environment, which means not only integrating this priority into the investment decision-making process, but also, wherever possible, searching for options which both improve the environment and strengthen regional competitiveness. Examples of such 'win-win' options are the clean-up of areas previously damaged by industrial activity and their reconversion as sites for new business development, the modernisation of rail links to improve accessibility instead of the construction of new motorways, or the development of clean, renewable energy sources to replace coal or oil-fired electricity generating plants which both deplete scarce resources and pollute the atmosphere.

Although such 'win-win' options are not always possible to find, a central tenet of development policy in



1.7 Territorial diversity – degree of fragmentation of natural areas

- less than 20% of natural areas
- between 20% and 50% of natural areas; highly fragmented
- between 20% and 50% of natural areas; moderatelyly fragmented
- between 20% and 50% of natural areas; low fragmentation
- more than 50% of natural areas
- built-up areas
- no data

Natural areas = all areas (NUTS3 level) excluding built-up areas and agricultural areas.

Source: CORINE Landcover

0 100 500 km

both sensitive areas and elsewhere should, nevertheless, be to follow strategies which minimise any damage to the environment in order to ensure that they are sustainable over the long-term and do not simply represent a short-term means of stimulating growth.

Environmental problems are particularly acute across the EU both in areas where there is a high concentration of population, and therefore economic activity of various kinds, and in areas where there is pressure on natural resources from agriculture especially but also from mining and similar activities. These areas are by no means evenly distributed across the EU but are concentrated in particular places (Map 1.7). The need in these areas is to clean up the environment and to prevent any further damage. But it is no less important to prevent any further deterioration of the environment in natural or semi-natural areas, where human activity is progressively encroaching or which are being abandoned and, becoming either increasingly fragmented or lacking protection for their natural resources. These aims, in consequence, need to be an integral part of economic development strategy across the EU to ensure that development is sustainable.

Factors determining growth, employment and competitiveness

In March 2000, at the Lisbon Summit, the European Union set itself the goal of becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustained and sustainable economic growth with more and better jobs and closer social cohesion. In so doing, it has identified a number of priorities:

- to give priority to innovation and enterprise, notably by creating closer links between research institutes and industry, developing conditions favourable to R&D, improving access to finance and know-how and encouraging new business ventures;

- to ensure full employment, by emphasising the need to open up employment opportunities, to increase productivity and quality at work and to promote lifelong learning;

- to ensure an inclusive labour market in which unemployment is reduced and social and regional disparities in access to employment are narrowed;

- to 'connect' Europe, especially through closer integration and by improving transport, telecommunications and energy networks;

- to protect the environment, the more so since it stimulates innovation, and to introduce new technologies, for example, in energy and transport.

European cohesion policy makes a major contribution to these objectives, especially in those regions where there is unused economic and employment potential which can be realised through targeted cohesion policy measures, so adding to the growth of the EU economy as a whole.

From a policy perspective, for regional development to be sustained requires favourable conditions being established at the national level, in particular a macroeconomic environment conducive to growth, employment and stability and a tax and regulatory system which encourages business and job creation.

At the regional level, two complimentary sets of conditions need to be satisfied. The first is the existence of a suitable endowment of both basic infrastructure (in the form of efficient transport, telecommunications and energy networks, good water supplies and environmental facilities and so on) and a labour force with appropriate levels of skills and training. A strengthening of both physical and human capital, together with improvements in institutional support facilities and the administrative framework in place, is particularly important in Objective 1 regions and the accession countries where both at present are seriously deficient.

The second set of conditions, which directly relates to the factors of regional competitiveness which are

important in the knowledge-based economy, is that innovation should be accorded high priority, that information and communication technologies (ICT) should be widely accessible and used effectively and that development should be sustainable in environmental terms. This set of conditions largely relates to 'intangible' factors which are more directly related to business competitiveness than the first set. They include, *inter alia*, the capacity of a regional economy to generate, diffuse and utilise knowledge and so maintain an effective regional innovation system; a business culture which encourages entrepreneurship; and the existence of cooperation networks and clusters of particular activities.

These two sets of conditions are interrelated. Both need to be integrated to varying degrees into a long-term development strategy with clearly defined and agreed goals and with a political commitment to sustaining its implementation. The precise focus and the mix of factors which are targeted will depend on the starting position, the characteristics of the region concerned, the prevailing circumstances, the development path being followed and so on. These will necessarily need to change over time as development takes place and circumstances alter. There is, therefore, neither a unique nor fixed recipe for successful regional development. Each region has to find the right policy mix for its own development path given its particular economic, social, cultural and institutional features.

For both sets of conditions, public intervention can be justified by market failure. This is clear in the case of human capital or transport and other infrastructure, which are in the nature of public goods, where investment has social as well as financial effects and where the returns cannot all be easily, or economically, captured by those making the investment (such as by employers investing in the training of their employees). But it also applies to technological know-how, which equally has some of the features of a public good, insofar as the costs of making it available to many users are low compared to the cost of its development. Accordingly, since producers of knowledge (of new techniques and so on) cannot capture all the benefits generated by the innovation concerned, there is a tendency for under-investment to occur.

A vital role of EU cohesion policy is to help regions, specially the less favoured, to consolidate and develop their economic and employment potential, in line with their inherent comparative advantages. In this sense, developing regional competitiveness depends on modernising and diversifying the productive structure once a sufficient endowment of physical infrastructure and human capital is attained. This means, *inter alia*, encouraging the development of knowledge-based economic activities and innovation.

There are two final points to emphasise. The first is the critical importance for regional development of human capital and the institutional and administrative capacity of regions, since this determines the support for business and the nature and extent of both public-private partnership and cooperation between all those involved in the development process. This point is expanded below.

The second, as emphasised above, is the equally critical importance of taking explicit account of the need to protect the environment if the development path being followed is to be sustainable. This need cuts across all of the measures implemented to further development, but it applies, in particular, to investment in physical infrastructure where the potential conflict between improving endowment, especially of transport networks, and safeguarding the environment is most acute.

The concern in the rest of this part of the report is to examine the extent of disparities in both sets of conditions described above across an enlarged EU.

Transport infrastructure

An efficient transport system is a necessary condition for regional economic development, though improvements in transport alone are unlikely to be sufficient to ensure growth, in part because the increased access they provide to other markets is mirrored in the greater

ease which producers elsewhere are able to meet local demand.

Across the EU15 as a whole, both freight and passenger transport increased significantly over the past decade, freight (measured by ton-kilometres) by almost a third, around half as high again as the growth of GDP, passenger (passengers kilometres) by around 16%.

Transport flows

The car is the predominant means of passenger travel. In 2000, 78% of all journeys made (in terms of total kilometres travelled) in the EU15 were by car. However, while this is up on 1970, when the figure was 74%, it is slightly down on the 1990 figure, as is the proportion of journeys made by bus and coach, which fell to under 9% of this total. The counterpart is an increase in air travel, though this still accounts for only 6% of total passenger travel. Travel by rail accounts for much the same proportion, only just over 6% of the total, almost unchanged since 1990, but down from over 10% in 1970.

The large increase in freight transport (excluding by sea) over the 1990s, of 32%, was predominantly due to road, which registered an increase of 38%. Around 75% of total freight now goes by road, while only 14% goes by rail, a figure which has fallen continuously from 30% in 1970 and 18% in 1990.

In all the Cohesion countries, road accounts for a larger proportion of goods transported than in the rest of the EU, the figure ranging from 85% in Spain to 98% in Greece (although it should be noted that the figures are similar in Italy and the UK). Moreover, the transportation of goods by road has risen at a faster rate in these countries than in the rest of the EU, in part reflecting the higher growth of GDP, but also the lack of an effective alternative, despite the large amounts of investment in the transport network from the Structural Funds.

In the accession countries, freight transport has declined markedly over the transition period in Romania and Bulgaria, reflecting the fall in GDP and restructuring of economic activity away from heavy industry, as well as in Slovakia and Slovenia if less so. In most other countries, it has increased, especially in Latvia and Estonia.

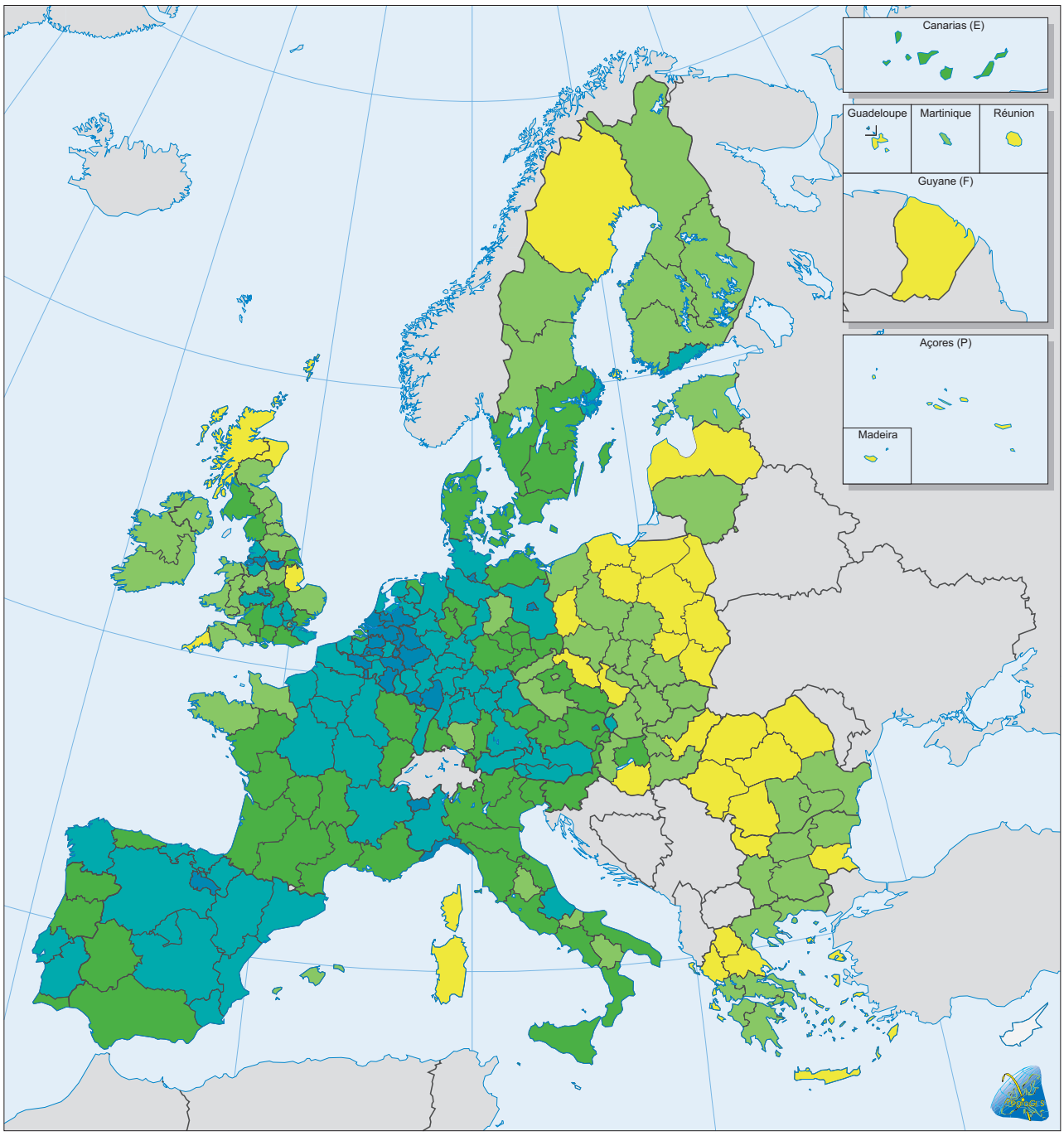
Nevertheless, the overall amount of freight transported in the accession countries is only half the level in the EU15 in relation to GDP.

In 2000, almost half of all freight transported in the accession countries went by road, while 38% went by rail, considerably more than in the present EU. In Bulgaria and the Czech Republic, however, the proportion of goods transported by road is close to the EU average, whereas in the Baltic States and Slovakia, it is only around a third or less.

But the relative shares are changing rapidly, freight shifting from rail to road. Indeed, only four years before 2000, the proportion of freight going by rail was much the same as that going by road. How far this continues to be the case in the future is dependent not only on the pace of economic growth, but also on its composition — the extent to which the demand for services increases relative to that for goods — and on the availability of effective alternative means of transport — rail or waterways.

There are no comparable data on passenger transport in the accession countries, though some indication of the growth of road use can be gained from the level of car ownership and the number of buses relative to population. Between 1996 and 2000, the number of cars in the accession countries taken together increased by over 20% in relation to population, with increases of over 50% in Latvia and Lithuania and over 30% in Romania. This, however, was only slightly more than the rise in the EU. In 2000, car ownership in relation to population, therefore, was still only just over half the average in the EU, suggesting substantial growth in future years as income rises.

At the same time, the relationship between income per head and car ownership is dependent on other factors



1.8 Density of motorways, 2001

Index, kms of motorways relative to land area and population

- 0
- 0 - 75
- 75 - 150
- 150 - 250
- > 250
- no data

EU15 = 100

LT, LV, EE: NUTS0

Source: Eurostat

0 100 500 km

such as the state of public transport and the pattern of settlements. In Portugal, therefore, the stock of cars is above the EU average and has risen particularly rapidly in recent years. In Italy, it is higher than anywhere else in the Union, while in Denmark, it is well below average and much the same as in the Czech Republic. Accordingly, how much car ownership, and by implication the use of cars, increases in the accession countries in future years is affected not only by income but by policy decisions made as regards the development of the transport system.

Networks

Roads

Comparisons of the endowment of road or rail infrastructure between countries need to be treated with caution because of differences in classification methods.

While the total length of the road network in the EU15 has remained broadly unchanged since 1991, the length of motorways has increased by 27%. Many of the new motorways have been constructed in the Cohesion countries, especially Portugal and Spain.

Nevertheless, the density of the road network as a whole[13] in Spain and Greece remains less than half the EU15 average, and in Portugal, it is also below the average, if only slightly. In Ireland, by contrast, it is well above average.

In Objective 1 regions taken together, the density has remained at around two-thirds of the EU15 average. On the other hand, the density of the motorway network in Cohesion countries increased from around 80% of the EU15 average in 1991 to 10% above average in 2001. This increase, however, was predominantly concentrated in Spain and Portugal, and density remains very much below the average in Greece and Ireland. In Objective 1 regions as a whole, the density of the motorway network was around 80% of the EU15 average in 2001, an increase from around two-thirds of the average in 1991 (Map 1.8).

In the accession countries, road density tends to be lower than in the EU15 and the density of motorways much lower still. Motorway density is around six times higher in the EU15 than in the accession countries taken together, largely reflecting the very few motorways in the larger countries in terms of land area. In Poland, therefore, there were still only around 400 kms of motorway in 2001, less than in Lithuania or Slovenia (435 kms), and in Romania, just 113 kms. In Estonia, there were less than 100 kms and in Latvia, none at all. Even in the Czech Republic, there were only just over 500 kms of motorway and in Hungary, around 450.

Although the construction of new roads is occurring at a relatively rapid pace in some countries — the length of motorways in Poland increased by over 50% in the three years 1998 to 2001 — these tend to be concentrated in a few areas, either around capital cities or on transit routes to the west. In Poland, therefore, around 75% of motorways are located in just three regions — Dolnoslaskie, bordering Germany, Opolskie, bordering Dolnoslaskie and the Czech Republic, and Mazowieckie, where Warsaw is situated. In the Czech Republic, there is a similar concentration in Stredni-Cechy around Prague and in Jihovychod in the south, bordering Austria and Slovakia. In Romania, virtually all the motorways are in the vicinity of Bucharest.

At the same time, the state of roads other than motorways is generally poor. Almost all roads are at best two-way and have invariably suffered because of a lack of maintenance over many years, before and after the transition process began.

This may help to explain the alarming figures for road deaths, which, in 2001, were significantly greater, per million cars, than in most EU Member States. In Latvia the figure was almost 900 deaths per million cars, in Lithuania and Poland, over 500, and in Hungary, Estonia, Bulgaria and Slovakia, only slightly less as compared with just over 300 in Spain, Portugal and Ireland and only around 150 in the UK. (There are no data for Greece or Italy.) On the other hand, the figures are similar to those experienced in some Objective 1

regions, particularly in Spain, where in Castilla y León and Castilla-la Mancha, road deaths were over 600 per million cars and in Extremadura, over 450.

Rail infrastructure

The total length of railway line in the EU15 is around 3% less than in 1991, as lines have been closed, and 10% less than in 1970. In the 4 Cohesion countries taken together, the density of the rail network (ie in relation to surface area and population) is only around 55% of the EU average, though higher in Ireland (80% of the average) than in the other three. For Objective 1 regions as a whole, rail density is some 75% of the EU15 average and little changed since 1991.

Some modernisation of the rail network has occurred over the past decade through the electrification of more lines (from 40% of the total in 1991 to 47% in 2001), but progress in converting single track to double has been limited (from 39% to 41%). The changes have been very similar in Cohesion countries and Objective 1 regions as in the rest of the EU, so that the gap between the former and latter remains. On average, around 40% of lines were electrified in both Cohesion countries and Objective 1 regions in 2001; only 24% of lines were double track in Cohesion countries and only just over 13% in Objective 1 regions. The situation, however, varies markedly between the Cohesion countries, In Greece, no lines at all are electrified and in Ireland, only around 2%, while in Portugal, the proportion doubled between 1991 to 2001 to over 30%

The overall standard of the rail network in the accession countries is poor and reflects decades of low investment. The proportion of electrified and double-track lines is below the EU average, though similar to that in the Cohesion countries and higher than in Objective 1 regions.

The rail network is in general technically obsolete, rail loading capacity is inadequate, a large proportion of the tracks are old and damaged, the gauge of track varies between different places as do power supply systems, making interoperability difficult. As a consequence, the maximum speeds allowed are typically in the range of 90–110 kms per hour and can be as low as 40–60 kms per hour on large stretches of the main lines.

Already, the growth of cars is outpacing improvement in the road network and leading to increasing congestion and environmental pollution. The dilemma facing policy makers is that the improvements in the road network which are undoubtedly required will tend further to encourage this growth. They are also likely to take resources away from equally necessary improvements in railways and public transport, which could reduce the shift towards cars and, accordingly, reduce the environmental problems likely to be caused by this.

Although the use of trains by both passengers and freight has declined as road use has grown, it remains substantially greater than in the EU. The question is for how long. The construction of new railway lines or the improvement of existing ones is a key part of the trans-European networks now under construction or being planned. In the accession countries, however, the emphasis, understandably seems to be on building new roads. At the same time, the need for improvements in the rail network in these countries extends well beyond establishing new and better links with existing EU Member States.

Recent forecasts suggest that freight transported by road will be 67% more in 2020 in EU15 than in 2000. Forecasts for the accession countries are for an increase of double this. If GDP in these countries, moreover, grows more rapidly than in current Member States, which is essential for convergence, road freight traffic could increase by even more than this.

Short sea shipping and inland waterways

Given the expected growth of road traffic in the coming years, and the greater congestion which is likely to result, encouraging more use of short sea shipping and inland waterways seems an attractive option,

especially since they generate much less pollution, are far safer and use less energy.

In 2000, some 28% of internal EU15 trade went by sea. Over the past decade, total cargo traffic at European ports, including to third countries, has grown by over 20% and container traffic has more than doubled. Container ports in the Mediterranean have experienced higher growth than northern ports and in 2000, 3 of the 8 largest container ports in the EU were located there (Gioia Tauro, Algeciras, Genova).

The development of short sea shipping in the accession countries, seven of which have coastlines, could help revitalise ports in peripheral regions and assist their economic development as well as easing transport problems, though for this to occur, there is also a need to improve access to these ports.

Inland waterways carry some 4% of freight transported in the EU15. Despite an increase in their use, their share of the total has fallen over the past 10 years. Their importance, however, varies considerably across the Union. While they carry substantial amounts of freight in the Netherlands (43% of the total), Germany and Belgium, they are not used at all in the Cohesion countries.

In the accession countries, the use of this method of transportation is largely confined to the Danube which crosses a number of the countries. There are significant problems, however, in expanding its use, not least that it is too shallow in many places to enable heavy freight to be transported and cargo ports are more widely dispersed than in Austria or Germany and often fail to meet loading capacity standards.

In sum, the main challenges to be addressed in the coming years are:

- to integrate and modernise road and rail networks in the accession countries in order to establish effective links with existing networks in the present Member States;
- to improve connections to the trans-European networks in order to enable all regions to gain maximum benefit from these;
- to improve cross-border and transit routes especially between the new Member States and between these and existing Member States in order to encourage and facilitate growth of trade between them, on which their long-term economic development almost certainly depends;
- to develop short sea shipping, which is particularly important in peripheral regions as well as for islands, and at the same time to strengthen links between different forms of transport;
- to direct EU investment towards shifting both freight and passengers from road to rail and waterways as well as shifting traffic away from congested routes.
- to develop a strategy for improving the accessibility of outermost regions and their connections with the European continent, which is not part of the trans-European transport network priorities.

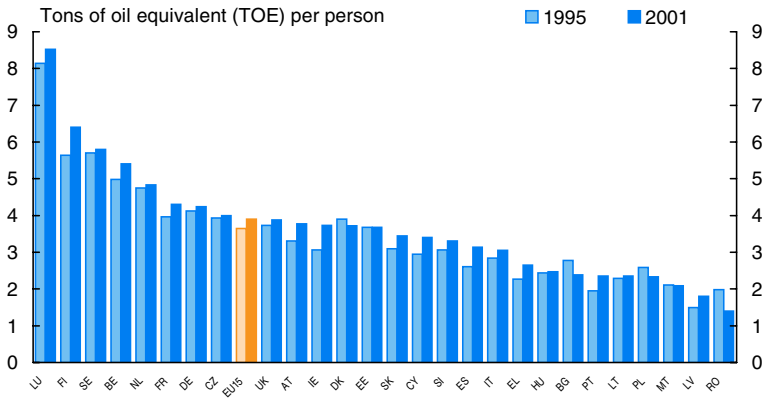
Energy

Access to clean, reliable and competitively priced energy sources is an important factor in regional competitiveness. Primary energy production, however, falls well short of consumption in most Member States. This is particularly the case in the Cohesion countries, which meet only a small part of their energy needs from domestic sources, importing 80% or more of what they consume (Graph 1.10). The UK and Denmark are the only countries in the EU which are net exporters of energy. The accession countries, for the most part, are more self-sufficient in energy, though all are net importers. Poland and Romania, in particular, import less than 12% of their energy needs. At the same time, solid fuels, which tend to be most harmful environmentally, account for almost 60% of primary energy produced in the accession countries as compared with

only 13% in the EU15. In Poland, just under 90% of primary energy production comes from solid fuels, in the Czech Republic, around 85% and in Estonia, over 75%.

By contrast, nuclear energy is responsible for 30% of primary production in the EU (over 80% in Belgium and France) as against 16% in the accession countries (though over 70% in Lithuania and Slovakia).

1.10 Gross inland consumption of energy, 1995 and 2001



EU15, DE, ES, IT, NL: provisional data for 2001

Source: Eurostat, Energy statistics and National accounts

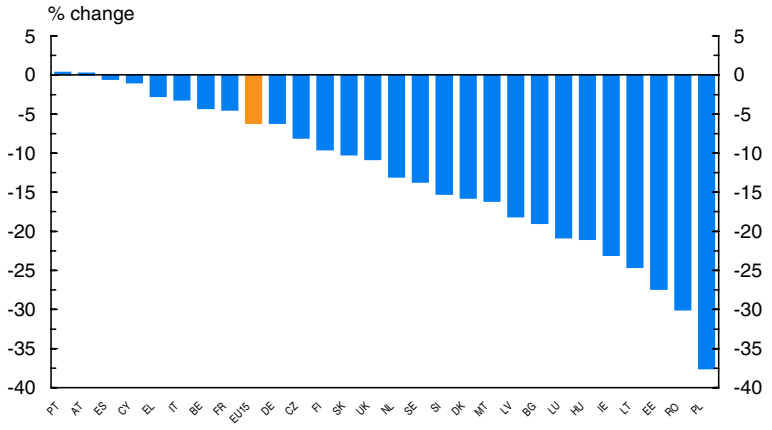
Energy consumption varies almost as widely as production, as a result, in particular, of differences in the structure of economic activity, climatic conditions, the nature of regulations, social behaviour and political decisions on taxation. Overall energy consumption per head in the accession countries is similar to the level in Greece or Portugal and much lower than the EU average.

Consumption per head generally increased in the EU between 1995 and 2001, most especially in the Cohesion countries, as it did in most of the accession countries, the exceptions being Poland, Malta, Bulgaria and Romania.

Despite the comparatively low consumption per head, however, the Cohesion countries consumed between 17% and 35% more energy relative to GDP than the EU15 average while in the accession countries taken together, consumption was almost four times higher (this, it should be emphasised, measures GDP in terms of Euros rather than PPS). Between 1995 and 2001, energy consumption fell relative to GDP in all the accession countries, in many cases markedly, whereas in the EU the decline was relatively small and in Portugal and Austria, there was a marginal increase (Graph 1.11).

The primary sources of energy consumed in the EU differ significantly from the sources of production, with oil, in particular, which is largely imported, accounting for a much larger share of consumption than production in both the existing and new Member States (Graph 1.12). Expansion of renewable sources of energy (such as biomass, wind and solar energy as well as hydro-electricity) is a common objective of EU

1.11 Change in gross inland consumption of energy per unit of GDP, 1995-2001



Source: Eurostat, Energy statistics

policy and the Commission has set a target of doubling the share of renewables in overall energy consumption in the EU to 12% by 2010. Their use at present, however, varies considerably between countries, in part reflecting the ease of exploiting the various sources, in part the policies adopted in this regard.

Renewable sources of energy supplied just 6% of the total energy used in the EU in 2001, only slightly up on the figure in 1995. Their importance in the accession countries (5% of the total) was only a little less. In a number of countries across the enlarged EU, however, the figure was much higher. In Latvia as well as Sweden, it was around 30% or more, in Austria and Finland, over 20%, and in Estonia, Romania and Slovenia, around 11%, just below the figure in Portugal (14%). In all the accession countries, the relative use of renewable sources increased between 1995 and 2001, in Latvia, Lithuania and Romania, substantially. It also increased in Finland and Sweden, but in Austria and Portugal, it fell over these six years.

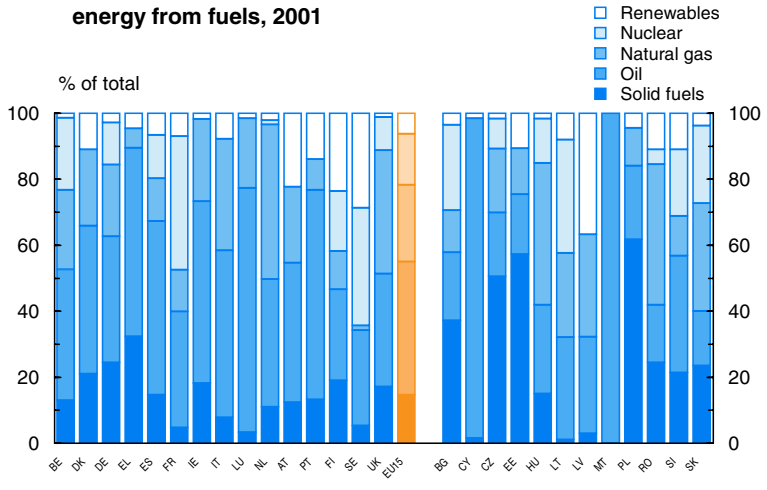
All four major planks of EU energy policy — security of supply, completion of the internal market and integration of environmental considerations as well as promotion of renewable energies — can have a positive effect on cohesion. By reducing the amount of energy consumed per unit of output and by depending more on renewable sources, all Member States can reduce their dependence on imports and so avoid the potential disruption to their economies of a possible external supply shock (such as a sudden increase in the price of oil). The development of renewables can also, if planned carefully, mitigate the damaging effects of energy production on the environment (although there have been increasing concerns about the ecological damage caused by hydro-electricity schemes), while potentially providing a cost-effective solution to peripheral areas in particular.

Other infrastructure to improve regional attractiveness

The importance of social infrastructure, including, in particular, schools, colleges and hospitals, should not be underestimated as a factor affecting regional competitiveness. The availability of high quality social infrastructure can influence decisions of where to locate investment and set up business, particularly in cases where those concerned have wide discretion over where they live and work and so can take account of personal preferences and family interests. Such infrastructure is, therefore, becoming an important part of the development policy of regions seeking to attract high value-added, knowledge-based activities.

Social infrastructure is also important in maintaining population. Good schools are increasingly determining where people choose to live, as witnessed by variations in property prices. Equally, the availability of day care facilities is a key factor in determining whether or not many women with young children are able to pursue working careers, and which, accordingly is part of the reason for low employment rates among women in parts of the EU, especially the less prosperous parts, as well as for high rates of part-time employment elsewhere[14]. The provision of such facilities may help to

1.12 Composition of gross inland consumption of energy from fuels, 2001



Source: DG TREN

keep people from moving away from some of the more peripheral and rural areas where the creation of jobs for women has been identified as one of the ways of encouraging people to stay.

In this regard, results from the first Urban Audit carried out in 58 European cities, which together account for an average of 15% of the population in the countries in which they are located, indicate that those in the more prosperous regions have a larger number of day care places per inhabitant than cities in the less prosperous ones.

For the elderly, it is of vital importance to have access to good health care facilities as they grow older. For some, the availability of care may determine whether they spend their retirement years in the place they have been living or move elsewhere. At the same time, good health care facilities are equally important in tourist regions, especially those in the south of Europe with warm climates, seeking to attract the growing number of people in retirement who take extended, or more frequent, holidays and whose choice of where to stay is influenced by the care available.

It is, therefore, of some relevance in this respect that, while there are similar numbers of doctors, nurses and other medical practitioners per head of population in the south of the EU as in the north, there tend to be fewer hospital beds in relation to population.

Whereas in Germany and France, therefore, there are 8–9 beds per 1000 people, in Greece, the average is 5 and less than this in tourist areas, falling below 3 in Kentriki Ellada and Peloponnisos and below 2 in Sterea Ellada. Similarly in Portugal, the average is 4 beds per 1000, but only 2½ in Alentejo and 2 in the Algarve. In Spain, where the average number is also 4 per 1000, it is only around 3 in Valencia and Andalucía, and in Italy, there are fewer hospital beds in Campania, Basilicata and Sicilia (around 4 per 1000) than in northern regions (over 5 per 1000 in most cases).

In Italy, in particular, this difference in part reflects the age structure of the regional population and the fact that the elderly, who impose disproportionate demands on the health system, account for a much smaller proportion of the population in the south than the north[15]. On the other hand, the figures almost certainly understate the disparity between the southern and northern regions in this respect, given that the resident population in the former is increased significantly by tourists for long periods of the year.

In the accession countries, the position is much more favourable. Not only are numbers of doctors, nurses and other health care professionals on a par with numbers in the EU15 in relation to population or even higher, but, with the exception of Cyprus (4 beds per 1000 inhabitants), the number of hospital beds is also relatively high. In the Czech Republic, therefore, there are some 11 beds per 1000 people, more than in virtually all parts of the EU15, and in Lithuania and Latvia, around 9, more than in Germany or France, while the countries with the lowest figures, Poland and Estonia, still have around 7 beds per 1000 which is above the EU average.

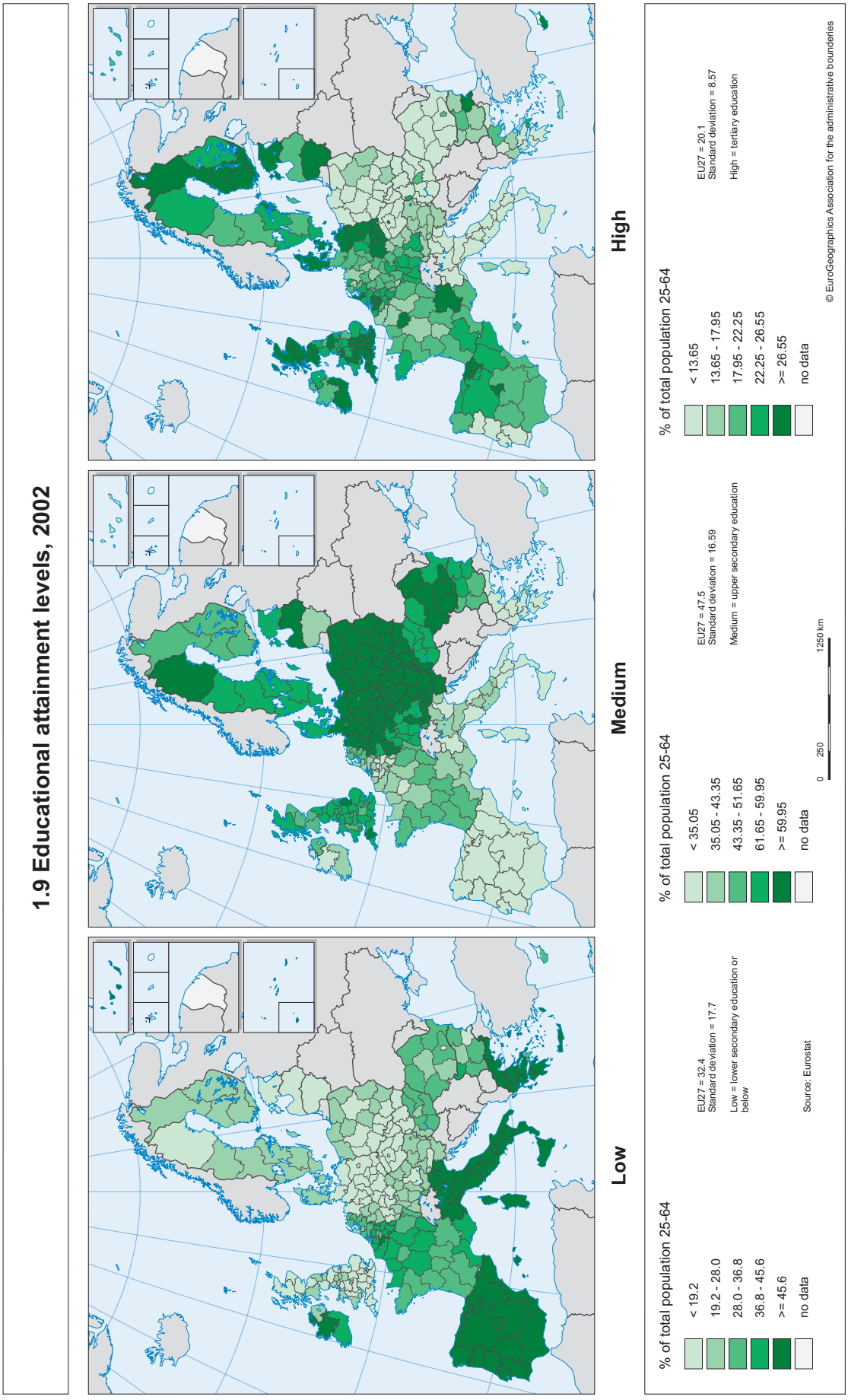
Social infrastructure, together with environmental conditions, is a key determinant of the quality of life in any region and is as important as systems of transport and other more traditional forms of infrastructure for regional competitiveness.

Human resources

The European Employment Strategy launched in 1997 seems to have contributed to increasing the resiliance of employment in a period of economic slowdown. Between 1999 and 2002, the number employed increased by 6 million and long-term unemployment fell from 4% of the labour force to 3%. However, while notable improvements have occurred in the operation of EU labour markets, important structural weaknesses remain in both present and future Member States.

Education of growing importance

Education levels play a major role in determining economic performance and the competitiveness of the


1.9 Educational attainment levels, 2002
Low
Medium
High
% of total population 25-64
< 19.2
19.2 - 28.0
28.0 - 36.8
36.8 - 45.6
>= 45.6
no data
EU27 = 32.4
Standard deviation = 17.7
Low = lower secondary education or below
Source: Eurostat
% of total population 25-64
< 35.05
35.05 - 43.35
43.35 - 51.65
61.65 - 59.95
>= 59.95
no data
EU27 = 47.5
Standard deviation = 16.59
Medium = upper secondary education
0
250
1250 km
% of total population 25-64
< 13.65
13.65 - 17.95
17.95 - 22.25
22.25 - 26.55
>= 26.55
no data
EU27 = 20.1
Standard deviation = 8.57
High = tertiary education
© EuroGeographics Association for the administrative bounderies

European economy[16]. It is also of key importance for the employment opportunities open to people. This applies not only to the range of jobs that are available to them but more fundamentally to whether or not they are able to find a job at all. Those with tertiary level education — ie with university degrees or equivalent qualifications — are more likely to be in employment than those with upper secondary level who are in turn more likely to be employed than those with only basic schooling. This tendency, which is only likely to be strengthened by the continued development of the knowledge-based economy in future years, is very evident in existing EU Member States, especially for women. But it is even more pronounced in the accession countries for both men and women.

Whereas, some 86% of men aged 25 to 64 with tertiary education were in work in the accession countries taken together in 2002, the figure for those with upper secondary education was 74% and for those with only compulsory schooling, 51%. For women, 79% of those with tertiary education were in work, 61% of those with upper secondary level and only 38% of those below this level.

Similar differences are evident at the regional level, but in a more pronounced form. The gap in employment rates between those with high and those with low education tends to be wider in regions where the overall employment rate is relatively low than in those where it is higher. People with low education, therefore, are much more likely than those with higher education levels to be out of work if they live in low employment regions.

Education levels in the accession countries compare favourably with existing EU Member States …

According to the latest data (2002), some 78% of the population aged 25 to 64 in the accession countries have at least upper secondary education. The proportion varies from just over 70% in Bulgaria and Romania to over 85% in the Czech Republic and Slovakia, well above the EU average (64%) and even further above the average in existing Objective 1 regions (only around 40% in such regions in Spain and Italy and just 20% in Portugal). The one exception is the German new Länder, in which the proportion is over 90%, higher than in the rest of the country and more similar to that in the accession countries than the EU, reflecting their common recent history (Map 1.9).

There is a question mark, however, over how well upper secondary education and initial vocational training in accession countries equip young people for labour market needs or to be able to adapt as needs change. In particular, curricula and teaching structures in these countries seem not well adjusted to the modern economy. With only a few exceptions, they tend to score relatively poorly in international tests of literacy and numeracy.

… though less so in tertiary education

The proportion of the population attaining tertiary education tends to be low in the Objective 1 regions of the Union. In all countries, except Germany where the new Länder have especially high education levels, the average proportion with a university degree or equivalent is lower in Objective 1 than in other regions. In Greece and Portugal, where all regions are Objective 1, the proportion is below the EU average. Furthermore, although education levels appear to be improving in general, in the sense that larger numbers of young people have tertiary education than those in older age groups, there is little sign of the gap between Objective 1 and other regions being closed.

The relative number of working-age population with tertiary education is also relatively small in most of the accession countries. Overall, only 14% of those aged 25 to 64 have university degrees or the equivalent, well below the EU average (22%). Only in Estonia and Lithuania were the figures above the EU average. In the Czech Republic and Slovakia as well as in Poland and Romania, the proportion was only around 10–12%. Nevertheless, this is still higher than in Portugal or the Objective 1 regions of Italy.

In most accession countries, the only exceptions being the three Baltic States, a smaller proportion of women aged 25 to 64 had upper secondary level education than of men, but in most countries, more women had tertiary level qualifications. In the EU, women in this age group tend to have lower qualifications than men — though not in Portugal — but the position is changing rapidly as significantly more women than men in younger age groups continue in education beyond basic schooling and go on to university. Although there has been an increase over time in the numbers acquiring tertiary level qualifications in the accession countries, the proportion of 25 to 29 year-olds with university degrees or equivalent (17%) is still substantially lower than in the EU (27%).

Education attainment levels vary across regions in the accession countries as well as in the existing EU. In general, levels are on average significantly higher in the capital city regions than in the rest of the country and, to some extent, in the more prosperous regions than in the less prosperous.

Less prosperous regions have a higher level of early school leavers

Significantly more young people leave the education system with only basic schooling in Objective 1 regions than in other parts of the EU. In 2002, some 26% of those aged 18 to 24 in Objective 1 regions had no qualifications beyond basic schooling and were no longer in education or training, twice the proportion in non-Objective 1 regions. Although many of these were working, they are likely to find it increasingly difficult to find jobs in the knowledge-based economy as they get older and as educational requirements increase. Reducing the number of such people in Objective 1 regions can, therefore, make an important contribution not only to reducing employment disparities between regions but also to strengthening their development prospects[17] (Map A1.8).

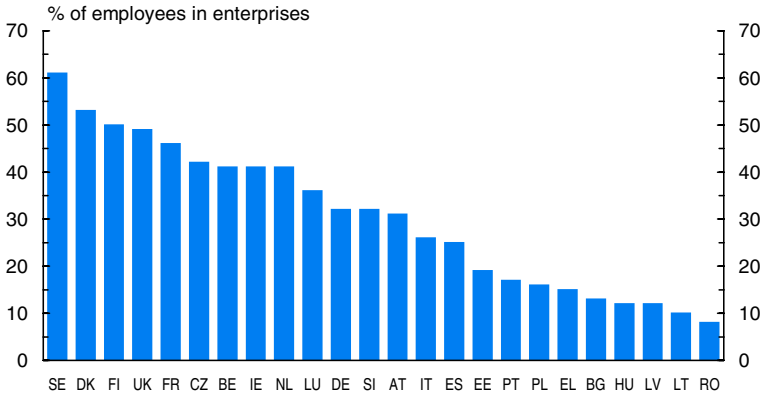
In the accession countries, the rate of drop-out from the education system is in most cases much lower than in the EU15. Only in Bulgaria, Latvia and Romania is the proportion of those aged 18 to 24 with only basic schooling and no longer in education or training above the EU average (around 20% or just above in all three cases), though even here, it was still below the average in Objective 1 regions. In Hungary, it is around 12%, in Poland, 8% and in the Czech Republic, Slovakia and Slovenia, only around 5%.

Life-long learning

The capacity of the labour force, as well as businesses, to adapt to changing market circumstances is a key factor in regional competitiveness. This requires access to training in order to update and extend skills. Continuing vocational training is, therefore, of as much importance both to an individual's career prospects and to the competitiveness of economies as initial education.

The relative number of those in employment participating in continuing training is much less in the Cohesion countries, Ireland apart, than in the rest of the EU, according to the latest data available[18]. In Spain, the

1.13 Rate of participation in continuing vocational training, 1999



** PL = refers to the Pomorskie region only*

Source: Eurostat, Second Survey of continuing vocational training in enterprises (CVTS2)

proportion was only some 25% in 1999 as against an EU average of 40%, while in Portugal, it was 17% and Greece, just 15%. (These figures, it should be noted, cover only the enterprise economy and exclude public administration, communal services and agriculture.) (Graph 1.13).

In the accession countries, continuing training is particularly important given the restructuring of the economy and the apparent narrowness of the initial educational and training system. Despite the relatively large proportion of young people attaining upper secondary level qualifications, most of these tend to train for a particular vocation which does not necessarily safeguard their long-term future on the labour market as the demand for skills changes.

Participation in continuing training, however, seems in most cases to be significantly lower in the accession countries than in the EU. On average, only 17% of those in employment in the enterprise economy received any form of vocational training in 1999, less than half the proportion in the EU, though similar to that in Portugal and slightly higher than in Greece. Only in the Czech Republic was the proportion in receipt of training above the EU average, if only slightly (42%). In the other accession countries, apart from Slovenia (32%), the proportion was under 20%.

There is a clear need, therefore, to expand continuing training in these countries and to provide much wider access to lifelong learning. The major difficulty is one of finding the necessary financial means of achieving this.

Participation of women in the labour market

The potential of women to contribute to economic activity in the EU has still not been fully tapped. While the employment rate of women in the Netherlands, the UK, Austria and the Nordic countries is already above the Lisbon target of 60%, in Spain, Greece and Italy, it is well below.

Women are paid less than men for equivalent work. The gender pay gap has remained at 16% since 1998.

Immigration and the integration of third-country nationals

Given the prospective decline in population of working-age in the EU in the years to come and labour shortages in a number of activities, immigration has taken on new significance.

The successful integration of immigrants into society is important both for social cohesion and economic efficiency, especially in the context of the Tampere and Lisbon agendas. Persisting problems of high unemployment and exclusion from the labour market among non-EU nationals, many of whom are immigrants from third countries but some of whom are the children of immigrants who were born in the EU, demonstrate that greater efforts of integration are needed.

Policies for improving the integration into society of those migrating into the EU from third countries as well as ethnic minorities need to take account not only of economic and social aspects but also of cultural and religious diversity, citizenship and political rights. The consequences of the influx of migrants need, in addition, to be taken into consideration at regional and local level. While priorities vary between countries, integration policies need to be planned over the long-term and be responsive to the specific needs of particular groups.

What is required is not only more coherence between relevant policies at all levels, but also closer collaboration both between different layers of government and between public authorities and the Social Partners, the research community, local service providers, NGOs and, above all, migrants themselves.

Gender segregation in the labour market persists with many more men than women working as managers and in senior positions. Working arrangements are a major factor underlying the low participation of women. Moreover, almost a third of women in employment work part-time as against less than 5% of men,

many doing so because of the lack of childcare facilities.

In all new Member States, the participation of women in the labour market fell markedly during the early years of transition. In 2002, in Cyprus and Slovenia, the employment rate of women was just below the Lisbon target, while in Poland, the figure was only 47% and in Malta, just 32%.

Preventing unemployment and active labour market policies

Preventative measures and active labour market policies are essential if the full potential of the work force in the EU is to be tapped. In many Member States, efforts have made efforts to ensure that everyone becoming unemployed is given individual job search assistance and guidance at an early stage. Indeed, there is a general tendency towards increasing personalised support and improving the efficiency of programmes by identifying the needs of job seekers and giving preference to tailor-made over general measures.

Efforts are also being made to ensure that young people have access to training, work experience or some other employability measure before they have been unemployed for 6 months and those over 24, for 12 months. There is too little attention, however, given to the inactive as opposed to those registered as unemployed, which can, in particular, limit the access of women to labour market programmes.

Equally, there remain differences in the effectiveness of active labour market policies between different parts of the Union, and such policies need to be strengthened especially in regions with high unemployment and a need for restructuring.

This need extends to the new Member States, where expenditure on active policies seems to be low given their high unemployment — and high long-term unemployment — even in relation to levels in Greece and Portugal which are the lowest in the Union.

The main challenges to be addressed in the future to achieve the employment objectives set at Lisbon and increase productivity are:

- to promote the adaptability of workers and enterprises, by increasing their capacity to anticipate, stimulate and absorb change;

- to increase labour participation and make work a real option for all, especially given the prospectve decline in working-age population, by breaking down barriers to the labour market, increasing employability and preventing unemployment, making working arrangements more attractive and ensuring that work pays;

- to invest more, and more effectively, in human capital, to ensure that low-skilled workers in particular are able to acquire and update their skills so that they can remain and progress in work and to increase educational attainment levels and the participation of people in training throughout their working lives so as to make lifelong learning a reality.

Innovation and the knowledge economy

Knowledge and access to it has become the driving force for growth in advanced economies like the EU. Know-how and intellectual capital, much more than natural resources or the ability to exploit abundant low-cost labour, have become the major determinants of economic competitiveness since it is through these that economies can not only increase their productive efficiency but also develop new products.

Innovation, therefore, holds the key to maintaining and strengthening competitiveness which in turn is essential for achieving sustained economic development. The capacity to innovate, however, varies widely across regions in the EU and will do so even more after enlargement. This reflects similarly wide differences in access to knowledge and the ability to exploit it. Unless these differences can be narrowed, it will be difficult if not impossible to achieve the Lisbon

objective of the EU becoming the most dynamic knowledge-based economy in the world.

The difficulty faced by policy-makers intent on closing the innovation gap is to measure both the factors which give rise to it and their effect on competitiveness. The indicators available are partial and need to be supplemented by more qualitative information about regional circumstances, the various parties involved in innovative activities — research institutes, businesses and public authorities — and the relationship between them.

Several indicators are presented below. The picture they show is not new, but it confirms the extent of relative disadvantage of regions in the accession countries, as well as those currently designated as Objective 1.

Both R&D and high-tech activities are highly concentrated in the core regions of the present EU. In 1999, just 8 regions in the present EU accounted for over a quarter of total R&D expenditure in the Union and 30 were responsible for approximately half. As might be expected, there is a similar concentration of patents — an indicator, if only a partial one, of the output of innovation — with half of all high-tech applications to the EU Patent Office being made in just 13 core regions (Map A1.9).

There are even wider disparities between regions in business R&D expenditure, which is perhaps most relevant for assessing the potential contribution of the innovative effort to competitiveness. While average business expenditure on R&D in Germany was 1.7% of GDP, in Finland, 2.2% and in Sweden, 2.7%, in all regions in Portugal and Greece, except Lisboa, Attika and Pelopponisos, the figure was under one-tenth of this at under 0.2% of regional GDP. In Objective 1 regions across the EU as a whole, business expenditure amounted to less than 0.3% of GDP only just over a fifth of the average EU level (1.3%) (Map 1.10).

Government expenditure on R&D is much more similar between regions. Nevertheless, it was still slightly smaller in relation to GDP in Objective 1 regions in 1999 than in other areas (between 0.15% in Spain and Greece and 0.21% in Portugal as against an EU average of 0.27% in 1999 and, therefore, does not begin to compensate for the huge difference in the scale of business spending. This also applies, to a larger extent, to expenditure in higher education, which was much the same in Objective 1 regions as in others (around 0.4% of GDP).

While there was some increase in business expenditure on R&D in Objective 1 regions between 1995 and 1999, this was slightly smaller in relation to GDP than the growth in non-Objective 1 regions (though spending increased by more in percentage terms in the former than the latter). At the same time, government expenditure rose relative to GDP in Objective 1 regions while in other areas, it fell.

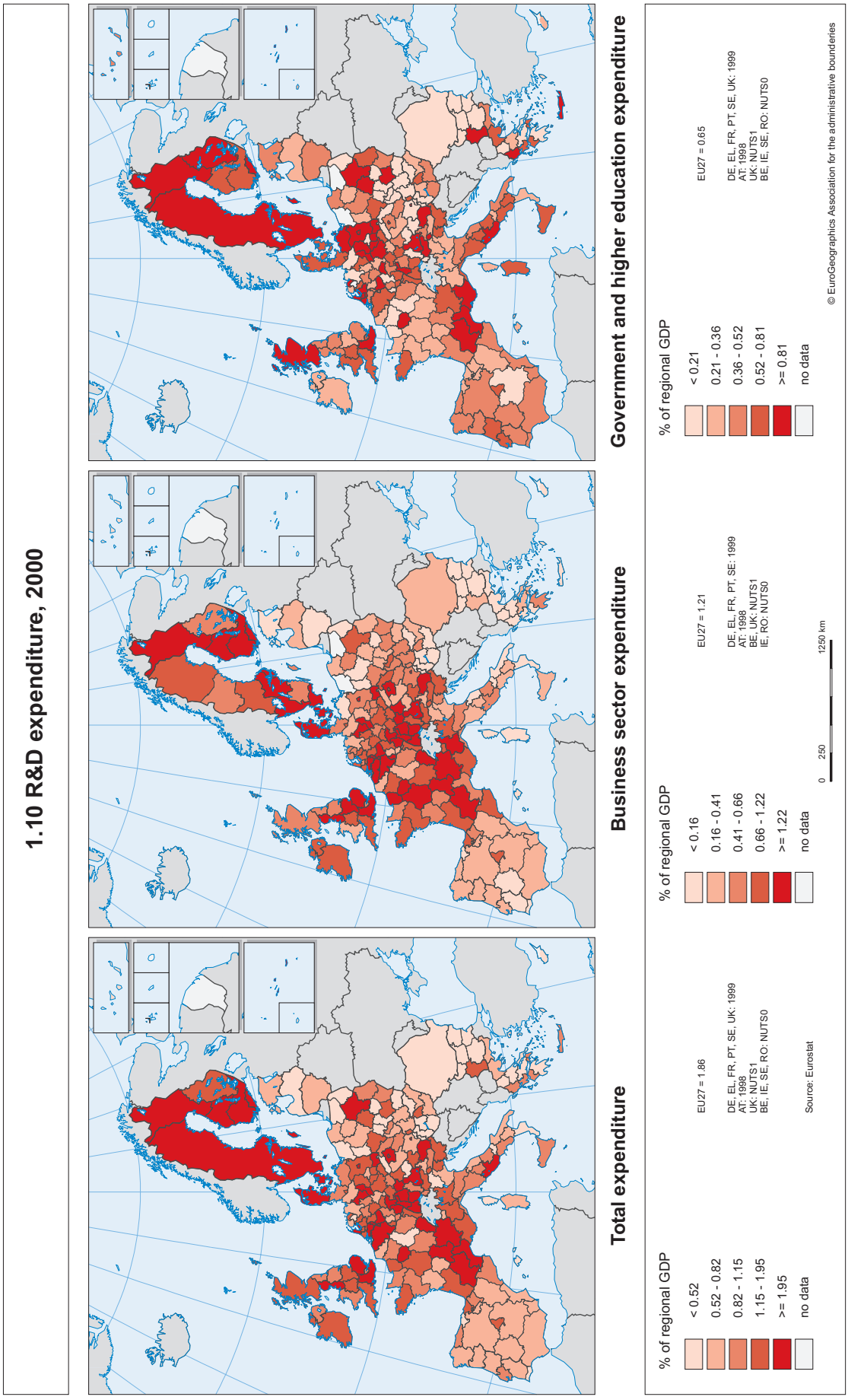
…state aid widen disparities between Member States…

It is also important to highlight the differing levels of support which Member States provide to businesses in the form of state aid for R&D[19]. Governments in the more prosperous countries, with a few notable exceptions, give substantially more support for the expenditure which companies undertake than those in less prosperous ones.

According to the latest data, the scale of support, varied from well over EUR 300 per person employed in manufacturing in Finland and Austria to only EUR 28 in Portugal and just EUR 12 in Greece. (Table A1.9).

Small size of firms is further undermining innovative capacity in weaker regions

Firms in less favoured regions suffer from being isolated from the best international R&D networks and research centres developing new technologies[20]. SMEs in these regions, in particular, have difficulty in finding out about the latest technological developments and how to use these and in making contact with suitable partners elsewhere.


1.10 R&D expenditure, 2000
Total expenditure
Business sector expenditure
Government and higher education expenditure
% of regional GDP
< 0.52
0.52 - 0.82
0.82 - 1.15
1.15 - 1.95
>= 1.95
no data
EU27 = 1.86
DE, EL, FR, PT, SE, UK: 1999
AT: 1998
UK: NUTS1
BE, IE, SE, RO: NUTS0
Source: Eurostat
% of regional GDP
< 0.16
0.16 - 0.41
0.41 - 0.66
0.66 - 1.22
>= 1.22
no data
EU27 = 1.21
DE, EL, FR, PT, SE: 1999
AT: 1998
BE, UK: NUTS1
IE, RO: NUTS0
0
250
1250 km
% of regional GDP
< 0.21
0.21 - 0.36
0.36 - 0.52
0.52 - 0.81
>= 0.81
no data
EU27 = 0.65
DE, EL, FR, PT, SE, UK: 1999
AT: 1998
UK: NUTS1
BE, IE, SE, RO: NUTS0
© EuroGeographics Association for the administrative boundaries

As recent OECD empirical studies have shown, product innovation is predominantly a collective process, involving interaction both between businesses and between these and the research institutes which make up the regional knowledge base. Firms located in weaker regions are often isolated from contact with other businesses and research institutes and as a result innovate less than those elsewhere[21].

R&D activity tends to vary with firm size, particularly in manufacturing. Regions with a high concentration of manufacturing employment in small firms, which are predominantly in the south of the EU, tend to have low rates of expenditure on R&D. In 2000, the share of employment in manufacturing in firms with under 50 people employed amounted to 47% in Portugal, 53% in Spain and 56% in Italy (no data available for Greece) as compared with only 27% in the rest of the EU. Moreover, within these countries, the share of employment in small firms is even larger in the weaker regions — over 60% in Objective 1 regions in southern Italy and 65% in those in Spain, according to estimates[22].

This disparity in firm size between regions is equally evident in the rest of the EU. In Germany, for example, small firms account for a third of employment in manufacturing in the new Länder as against around 20% in the rest of the country.

Unlike large firms, which usually have an internal capacity for research, SMEs depend largely on their capacity to access technology and know-how from outside, especially in their immediate vicinity. According to a recent survey, businessmen in SMEs rate the acquisition of advanced equipment and cooperation with suppliers and customers as the two most important ways to access new technology, well ahead of conducting in-house R&D[23]. Moreover two out of every three managers interviewed across the EU considered networking, in the form of joint development of new products, sharing knowledge between companies and so on, as important or very important for innovation.

The sectoral composition of economic activity also tends to work against weaker regions. High-tech industry and knowledge-intensive business services for the most part are concentrated in core regions, which in itself tends to increase innovative activity, since much more is spent on R&D in these activities than in more basic ones in which employment is concentrated in less favoured regions (Map 1.11).

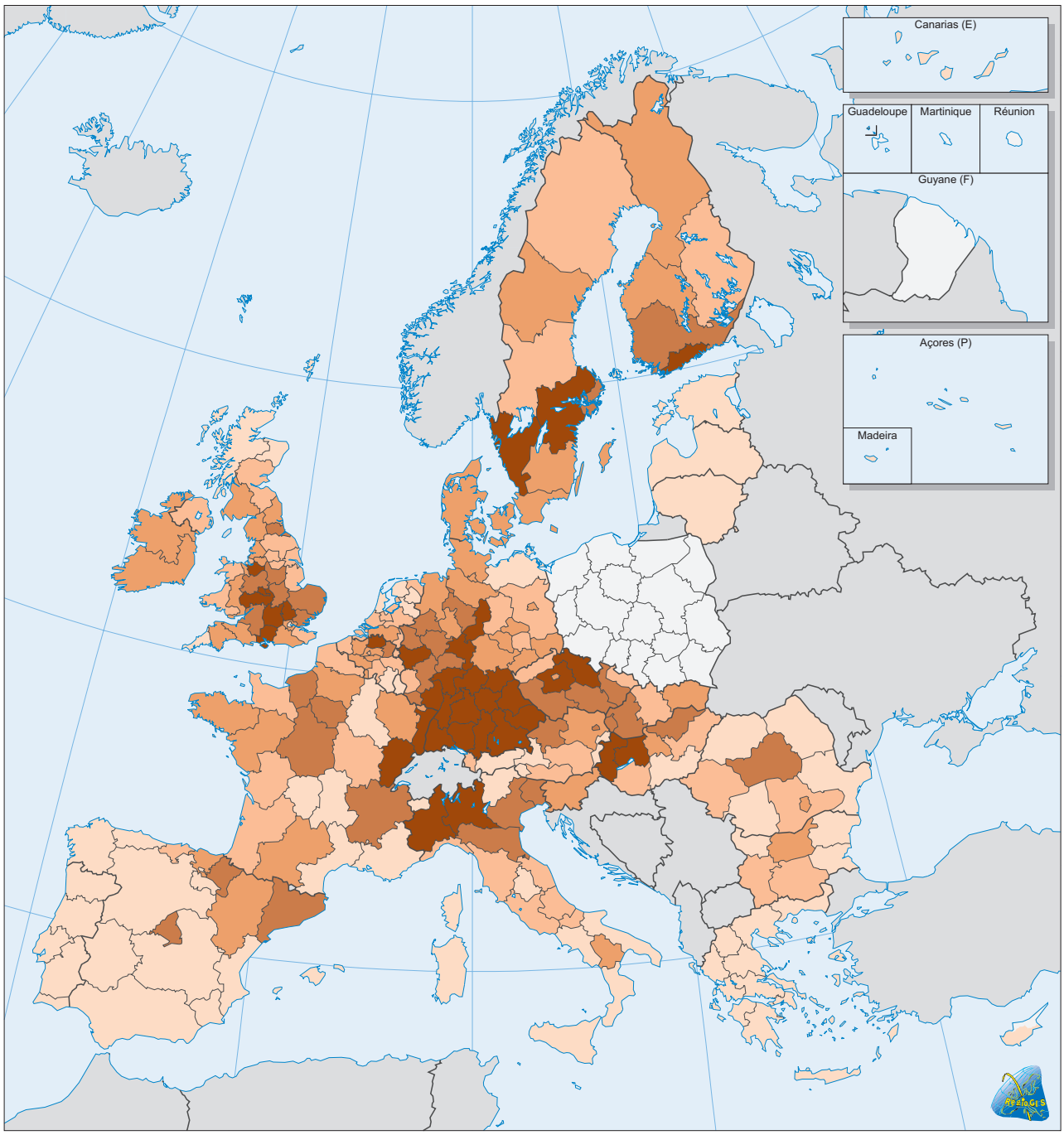
Moreover, employment growth in the EU tends to be concentrated in knowledge-intensive activities, which means that regions in which such activities are concentrated are not only likely to gain in competitiveness but they are better placed to generate new jobs. Over time, this could lead to an increasing concentration of these activities in the stronger regions and widening disparities between these and other regions[24].

Innovative activity in the accession countries

In the accession countries, much less is spent on R&D in relation to GDP than in most of the existing EU Member States but only slightly less than in Objective 1 regions. In 2001, expenditure amounted, on average, to under 1% of GDP (0.8%), under half the EU15 average. Expenditure by business enterprises accounted for only just over 45% of this, much less than in the EU (65%), while the rest was split fairly evenly between the government sector and higher education.

Business spending on R&D in the accession countries relative to GDP, therefore, was only around a third of the average level in the EU but marginally higher than in Objective 1 regions taken together. Government outlays in the accession countries were much the same in relation to GDP as the average for both the EU and Objective 1 regions, but higher education spending on R&D was only around half the EU and Objective 1 average.

There was less variation in spending between the accession countries than in the present EU. The Czech Republic and Slovenia, reflecting their relative prosperity, had the highest expenditure, but this was only around 1½% of GDP, less than in most Member States but more than in the four Cohesion countries



1.11 Employment in high-technology sectors, 2002

% of total employment

- < 7.45
- 7.45 - 9.55
- 9.55 - 11.65
- 11.65 - 13.75
- >= 13.75
- no data

Average = 10.6
Standard deviation = 4.30

Source: Eurostat

0 100 500 km

plus Italy. Bulgaria, Romania and Latvia had the lowest levels, at around ½% of GDP, similar to the level in Portugal but slightly below that in Greece. In the other countries, expenditure was much the same as in the existing Objective 1 regions outside Germany.

As in the EU, the main reason for the variation in overall expenditure on R&D is the difference in business expenditure. While this accounted for around 60% of total spending in the Czech Republic and Slovenia, it was responsible for 40% or less of spending in 6 of the other 8 countries.

Again as in the EU, there was little change over the second half of the 1990s in the level of spending on R&D relative to GDP in the accession countries taken together. Overall, there was a slight fall and the share of expenditure accounted for by businesses declined rather than increasing as in the Union. Only in the Czech Republic, Hungary and Lithuania did overall expenditure on R&D rise in relation to GDP between 1995 and 2001. In Romania and Slovakia, it declined markedly.

R&D concentrated in the most prosperous regions just as in the EU15

There is a clear tendency, as in the EU, for expenditure on R&D to occur disproportionately in the more prosperous regions within each of the accession countries. This is particularly evident in Bulgaria, where 80% of all spending took place in Yugozapaden where Sofia is located. It is almost as evident in Hungary and the Czech Republic, in both of which over 60% of spending occurred in the capital city and surrounding region. Indeed, the level of spending relative to GDP in Prague and the surrounding region of Stredny Cechy taken together amounted to almost 2½% of GDP, which is significantly higher than in any region in Spain or Italy and above the level in all French regions apart from Ile de France and Midi-Pyrénées. Similarly, in Poland, expenditure in Mazowieckie, in which Warsaw is located, amounted to around 1½% of GDP, over twice the level in all other Polish regions, except one (Malopolskie).

This relative concentration of expenditure in the more prosperous regions, however, owes much less to the location of business spending than in the EU. (The one exception is Stredny Cechy in the Czech Republic, where the high level of spending is wholly due to the scale of expenditure by business enterprises.) In Prague, business spending on R&D in relation to GDP was below the national average and the high expenditure overall is the result of high spending by government and higher education establishments. Similarly, in both Hungary and Poland, government spending on R&D was substantially greater in the capital city regions than elsewhere in the country, though in both cases this was accompanied by business expenditure in these regions also being high, if less so.

ICT offers new opportunities to firms and regions

Information and communications technology (ICT) has brought both new opportunities and challenges for businesses and represents a new factor of regional competitiveness. For regions, ICT has increased the pace of change with potentially profound effects on living and working conditions and on the territorial distribution of economic activity.

… but disparities remain in terms of regional access to ICT …

From a cohesion perspective, ICT seems to offer a major opportunity for reducing the 'friction of distance' and the problems of remoteness which many peripheral regions — and even more, outermost areas — suffer from. At the same time, however, there is growing concern over the territorial dimension of the so-called 'digital divide' and a fear that restrictions on access to ICT networks or limitations in the ability of enterprises and households to use the new technology could serve to widen rather then narrow disparities in regional performance.

Although the pattern of development of different aspects of ICT varies, a number of regional disparities are already evident:

- there is a north-south divide in the present EU in the development of most of the new technologies, which is broadly tantamount to a divide between cohesion and non-Cohesion countries;

- there is a west-east divide, between the existing EU Member States and the accession countries in the rate of penetration of all new technologies. There is, however, evidence of some catching up as adoption of several key technologies is growing more rapidly in the accession countries than in the EU15;

- there are considerable differences between accession countries in the rate of ICT development though, as in the EU, this varies between different aspects; for example, in 2001, the number of Internet users in Estonia and Slovenia was only slightly below the EU average but in Romania less than one-fifth of the average;

- there are disparities between regions within countries, with, in general, the pace of development in metropolitan areas, particularly large cities, being in advance of other parts and with rural areas lagging behind.

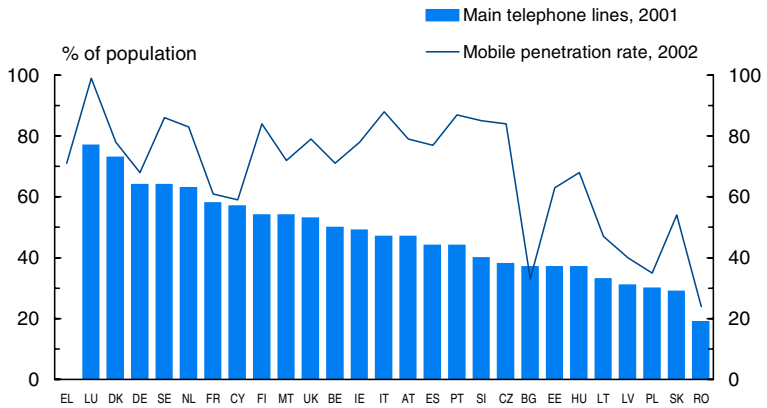
So far as telecommunications is concerned, the number of fixed telephone lines relative to population remains relatively low in the Cohesion countries, Greece apart, as compared with the rest of EU and has shown little tendency to increase in relative terms. In Spain and Portugal, therefore, there were 44 lines per 100 people in 2001 as against an EU average of 55, while in Ireland (49) as well as in Italy (47), it was also below average.

In the accession countries, the number of fixed lines is even smaller. Leaving aside Cyprus and Malta, where the number of lines relative to population is around the EU average, in all the accession countries, there were on average 40 lines or less per 100 people in 2001, the figure varying from 40 in Slovenia and 38 in the Czech Republic to 30 in Poland, 29 in Slovakia and only 19 in Romania. Unlike in the EU, however, these numbers have risen significantly since the mid-1990s, though more recent evidence suggests that the increase in a number of countries seems to have come to an end as ISDN and mobile lines develop (Graph 1.14).

The comparatively small number of fixed lines in relation to population in the southern EU Member States is offset in some degree by greater use of mobile telephones. In Italy and Portugal, therefore, the number of subscriptions to cellular mobile services in 2001 was above the EU average (84 and 78 per 100 people, respectively, as against an average of 74). In Spain, the number was the same as the EU average, though in Greece, it was below (68), less than anywhere else in the EU15, except France and Germany.

In the accession countries, the number of mobile subscriptions relative to population were in nearly all cases lower than in the EU in 2001. The two exceptions were the Czech Republic, where the number per 100 inhabitants was the same as in Greece (or Germany), and Slovenia, where it was the same as in Portugal and above the EU15 average. Elsewhere, the number ranged from 54 in Estonia and 49 in

1.14 Number of main telephone lines and mobile penetration rate, 2001/2002



Source: Eurostat, Telecommunication services, for main telephone lines; DG Information Society, Eighth Report on the Implementation of the Telecommunications Regulatory Package and 3rd Report on Monitoring of EU Candidate Countries, for mobile penetration

Hungary to 25 in Poland and just 20 in Bulgaria and Romania. Nevertheless, in all countries, the figure is rising steadily.

Although mobile telephones and the services they provide have become important for business efficiency, access to these has come to be taken for granted even in the less developed parts of the EU. This is not the case for broadband lines, which can make a much bigger contribution to business efficiency by providing, in particular, high-speed access to the Internet, enabling large amounts of data to be transferred and opening the way for the development of new online applications. Moreover, the use of broadband can reduce communication costs dramatically, so reinforcing the boost to competitiveness that it can involve. Access to broadband, however, varies markedly across the EU and across regions within countries, the least prosperous areas having least access, and this seems set to continue into the future. Already, therefore, broadband appears to be widening the digital divide rather than narrowing it.

The number of broadband lines in relation to population is highest, according to the most recent data available (for 2002) in Denmark and Belgium, reaching 7–8 per 100 people, and lowest in Greece and Ireland, at less than 1 line per 100, with the figure in Italy and Portugal being only slightly higher. In Spain, on the other hand, it was 2 per 100, the same as in France or the UK.[25]

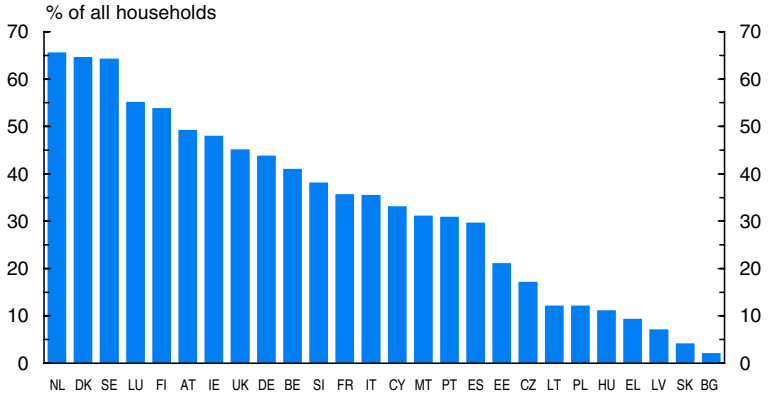
In the accession countries, access to broadband is, for the most part, even more limited than in the Cohesion countries, the main exceptions being Estonia and Slovenia. Here as in the EU, how quickly someone is able to have broadband installed or, indeed, whether they will be able to have it at all, depends on where they are located, whether centrally or peripherally. In a number of the more remote areas, access is likely to prove problematic for some time to come.[26]

The spread of broadband is closely related to the use of the Internet, which also varies across the EU to a large extent in line with levels of prosperity. In 2002, around 40% of households in the EU15 had access to the Internet, but around 65% in Denmark, the Netherlands and Sweden as against around 30% in Spain and Portugal and only 9% in Greece.

In the accession countries, fewer households in general have Internet access than in the EU15. Only in Slovenia was the proportion close to EU average in 2002 (at 38%), though in Cyprus and Malta (just over 30% in both cases), it is about the same as in Spain and Portugal. In other countries, the proportion ranges from 21% in Estonia and 17% in the Czech Republic to only 7% in Latvia, 4% in Slovakia and 2% in Bulgaria (there are no data for Romania). Nevertheless, except for the latter groups of countries, the figure was still higher than in Greece (Graph 1.15).

These generally low proportions in part reflect the technical difficulty of gaining access to the Internet in these countries and as these difficulties are resolved, they will undoubtedly increase. The extent of the increase, however, may well depend on both the spread of broadband and the services available on the Internet. Although the proportion of households with access to the Internet may not directly

1.15 Level of Internet access of households, 2002



Source: Eurostat, Information Society Statistics

have a bearing on economic performance, indirectly it tends to reflect both the technical abilities of people and their receptiveness to new technology, both of which can be important in economic development. Nevertheless, it is take-up and use of the Internet and other new technology by business which is likely to have a more direct influence on competitiveness.

Internet access by enterprises as would be expected is far higher than for households, with almost all firms above a minimal size having access in most Member States. In 2002, almost 80% of enterprises in the EU15 with more than 10 people employed had an Internet connection, with only a relatively small variation between countries. The proportion, therefore, was only slightly below the EU average in Greece (74%), which had the lowest figure in the Union, and around the average in Spain and Portugal. (No data are available for the accession countries.)

According to the latest survey data[27], the majority of enterprises of this size also had a website. However, the proportion of them using the Internet to sell their products or services varied by more than those with access, under 10% selling online in Spain, Greece and Portugal as compared with some 30% in Germany and the UK.

In the coming years, particular attention needs to be given to:

- developing new innovation promotion policies which focus much more on the provision of collective business and technology services to groups of firms which can affect their innovative behaviour, rather than direct grants to individual firms which tend only to reduce costs temporarily;

- developing new policies to strengthen the capacity of SMEs to innovate through business networks and clusters and improving their links with the knowledge base, including with universities and research centres;

- encouraging the development of the indigenous R&D potential of weaker regions and their capacity to adapt technological advances made elsewhere to local circumstances and needs;

- facilitating access of researchers, businesses and others in less favoured regions to international networks of excellence, sources of new technology and potential R&D partners.

Regional governance and institutional performance in the knowledge-based economy

It is widely accepted that good governance and an effective institutional structure are an important source of regional competitiveness through facilitating cooperation between the various parties involved in both the public and private sectors. In particular, they can improve collective processes of learning and the creation, transfer and diffusion of knowledge and transfer, which are critical for innovation. In addition, they can cement networks and public-private partnerships and so stimulate successful regional clusters as well as regional innovation strategies and policies. They are important for less-favoured regions which tend to have deficient systems of governance and inadequate understanding of science and technology policy issues yet face significant economic, technological and social change.

Evidence from research and pilot policy actions[28] suggests public policy can contribute to good governance, though promoting public and private partnerships and business networks, as well as improving the institutional capacity of regional authorities responsible for innovation.

The establishment of a regional framework for inter-firm cooperation is of paramount importance for the promotion of innovation in SMEs in particular. Such cooperation and the networks that are formed help to translate knowledge into economic opportunity, while at the same time building the relationships between people and organisations which can act as a catalyst for innovation.

Experience shows that good governance requires a shift from a traditional top-down approach towards a more open form involving all the relevant parties in a particular region. Such partnerships should extend to all the policy areas relevant for economic, scientific and social development (an integrated approach) and should ideally establish a long-term policy horizon (a strategic approach).

It is evident that the comparative advantages that drive innovation and investment are as much a regional characteristic as a national one. For regions to succeed, "they must harness their own mix of assets, skills and ideas to compete in a global market and develop unused potential." [29]

Regional authorities are in a strategic position to do this and, in particular, to set up public-private co-operation networks, which are important for knowledge-based economic development, and to create a suitable climate for effective innovation adapted to local SME needs. They are well placed to coordinate different elements (policies and institutions) of the regional innovation system, starting from an analysis of the development needs of local firms and the principal obstacles facing them, and to raise awareness of the importance of innovation.

A national innovation policy for SMEs is, therefore, difficult to implement without a close relationship with regional authorities with a detailed knowledge of key parties involved in R&D in regions and of the productive base. At the same time, regional innovation policies need to be coordinated with the major national and international R&D networks, including, universities and research centres.

Equally, such policies cannot be effectively developed without the direct participation of the private sector in planning and implementation and without the agreement and active support of others involved in R&D and innovation in the region — semi-public agencies, technology centres, universities and trade unions.

Environmental protection: achieving the Gothenburg objectives

In 2001, the European Council in Gothenburg added the environment as the third strand to the Lisbon strategy for economic and social development, so confirming the commitment to sustainability. EU policy is, therefore, aimed at creating a 'virtuous circle' within which regional development both reduces economic and social disparities and leads to an improvement in the environment.

There are, however, substantial differences between Member States and regions as regards the present state of the environment, the nature and scale of problems which threaten it and the local capacity to combat them.

Although data at the regional level are incomplete, the indicators which can be constructed tend to show a positive association between the state of the environment and economic and social performance.

Water

Access to clean water and the preservation of fresh water supplies is a factor of regional competitiveness. Many economic activities, such as agriculture, electricity generation and tourism, consume large quantities of water but at the same time are dependent on both the maintenance of supplies and the preservation of the environment in order to continue in operation.

Water, however, is scarce and in a number of regions, the amount abstracted annually is at or above critical levels (20% or more of the total resources) so threatening local eco-systems. Periodic droughts, such as in the summer of 2003, can add to this pressure. Regions in the south of the EU, especially island regions, tend to be the worst affected and a number are dependent to a large extent on water from the sea and on imports.

Consumption of water is especially high in the south of Europe, in the Cohesion countries and Objective 1 regions in Italy. In many regions in Spain and Greece, it exceeds 270 litres a head a day and poses a major challenge to public authorities. In the accession countries, consumption is generally below the EU15 average, though less so in Bulgaria and Romania.

Sustainable management of water uses needs to be based on the principle of integrated river basin management — in line with the Water Framework Directive — which means limiting abstraction in line with availability, ensuring reasonable prices and involving people in tackling problems.

Following the adoption of the Urban Waste Water Treatment Directive in 1991, there was substantial investment across the EU in the construction and maintenance of infrastructure and, as a result, recovery of waste water has increased significantly during the past decade. Nevertheless, there are still marked differences between countries and regions. The proportion of population connected to waste water treatment plants remains relatively small in Objective 1 regions and Cohesion countries, at only around 50% as compared with 80–90% in the Nordic countries. The proportion is also relatively small in many accession countries.

Waste

Each year, 1.3 billion tonnes of waste are generated in the EU, giving rise not only to loss of resources but also to major environmental problems if disposed of by landfill or incineration instead of being recycled, which Community policy is aimed at encouraging.

Though agriculture and industrial activities remain large producers of waste, municipal waste has continued to increase in the EU15 over the past decade, though in a few Member States it has fallen.

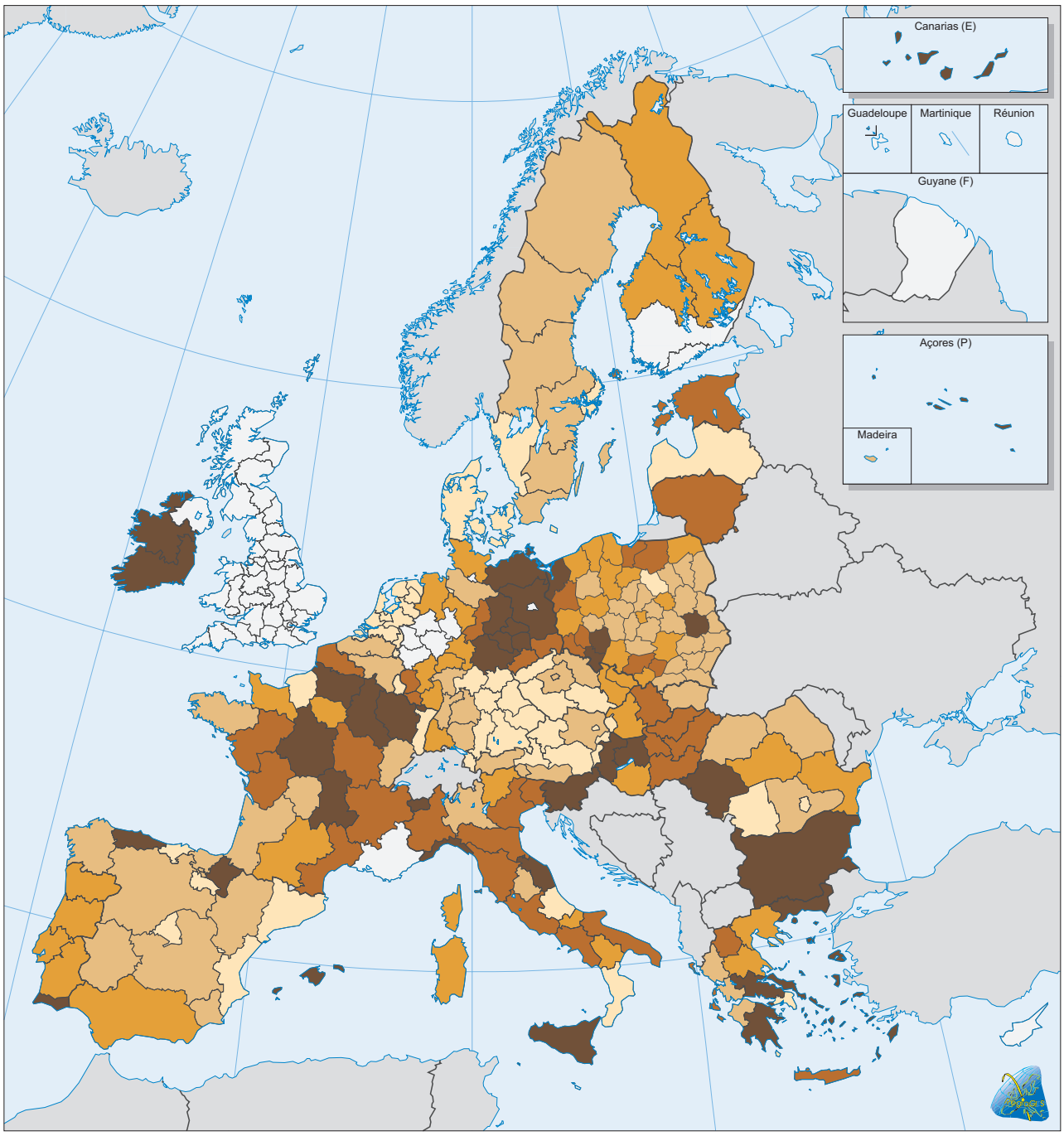
On average around 480 kgs of municipal waste per head of population is collected each year in the EU. In Objective 1 regions taken together, the figure is much the same, but in the Cohesion countries, it is significantly larger (550 kgs per head). In the accession countries, on the other hand, in part reflecting their lower real income levels, it is smaller (just below 400 kgs).

Half of the waste produced is disposed of through landfill in the EU, so contributing to increased greenhouse gases and other emissions. Whereas the average amount of waste in the EU15 which is landfilled is under 300 kgs per head, in the Cohesion countries, it is around 340 kgs and in Objective 1 regions taken together, 380 kgs. Levels are higher in the accession countries. Recycling, which is beneficial for the environment (and can have a net positive effect on employment and economic activity) and which has been encouraged by several Directives, is still of minor importance (Map 1.12). Community waste policy is geared towards promoting prevention, recycling and re-use rather than final disposal.

Climate Change

Climate change is caused by man-made greenhouse gases, the most prominent of which come from emissions of carbon dioxide from the combustion of fossil fuels. Among the most visible effects of climate change are summer heat waves, which can cause forest fires and devastate crops as well as increasing mortality rates (the summer of 2003 provides a forcible reminder of the effects). It can also increase the frequency of extreme weather events, such as droughts, floods and violent storms. Measures introduced or proposed at Community level, such as the Directive on Integrated Pollution Prevention and Control (IPPC) and the framework legislation on national air emission ceilings, enable policy-makers to take account of variations in local conditions.

Ten of the 15 present Member States are a long way from achieving their agreed share of the emissions target to meet the commitment under the Kyoto protocol (to reduce emissions by 8% as compared with 1990 by 2010). These include all the Cohesion countries. (In Ireland, in particular, emissions in 2001 were



1.12 Municipal waste disposed of by landfill

Kg per capita

- < 150
- 150 - 250
- 250 - 350
- 350 - 450
- > 450
- no data

EU14* = 291
* Based on BE, DE, FR: 1996; DK, EL, LU, AT, PT, FI: 1999;
ES: 2000; IE, IT, SE: 1998; NL:1997
BG, DK: NUTS0
BE: NUTS1

Source: Eurostat

0 100 500 km

31% higher than in 1990, as against the increase of 13% allowed between 1990 and 2008–2012 — Table A1.10).

In the accession countries, emissions declined by much more than in the EU over the 1990s, principally because of the large decline in heavy industries.

The differences between countries in terms of the main sources of emissions are revealing. While energy production in the accession countries contributes more than half of total emissions, because of the greater reliance on fossil fuels, in the Cohesion countries and the rest of the EU, it contributes less than a third. On the other hand, transport accounts for 21% of emissions in both the Cohesion countries and the EU15 as whole (a figure which has grown during the past decade) but for only 8% in the accession countries, though this is set to increase rapidly as road transport and the use of cars expand (Table A1.11).

Biodiversity

Around two-thirds of the European wetlands that existed 100 years ago have been lost. Urban sprawl, on the one hand, and abandonment of land as result of economic restructuring in peripheral areas and the accession countries, on the other, pose an ongoing threat to biodiversity.

Natura 2000 is aimed at preserving habitats and birds life in Europe through the establishment of a network of protected natural areas, encompassing more than 20,000 sites which have been either designated or proposed. These cover almost 15% of the total land area of the EU15 and the number of sites will increase with enlargement.

Environmental standards are an integral part of economic, social and territorial cohesion

Different environmental standards can create new dividing lines between those living in a clean and healthy environment and those who do not. If standards are respected, they can make regions more attractive to investors while improving the quality of life for the people living there.

In the EU15, priority in the past has tended to be accorded to economic rather than environmental objectives. Although the relative importance attached to the latter has varied markedly, cohesion policy has generally had stronger effects on economic and social indicators than on the environment.

Nevertheless, cohesion policy has helped the less prosperous Member States to comply with the EU environmental requirements (particularly as regards the directives for waste management, water supply and urban wastewater which involve heavy investment in infrastructure) and can continue to do so in the coming years when attention will focus on preventing air pollution. The growth of transport is a particular concern in this regard, since unless there is a shift to more environmentally-friendly means, economic growth will continue to be accompanied by increasing emissions.

This is particularly relevant for the accession countries, where the pent-up demand for cars and the poor state of the railways threatens to give rise to a substantial growth in road use and consequent emissions.

In the coming years, special attention needs to be given to sustainable development, in particular by:

- helping the new Member States achieve full compliance with the *acquis*, particularly as regards the Directives on waste management, water supply, urban wastewater and air quality which entail substantial investment;
- supporting the development of eco-industries and the use of cleaner technologies, especially in SMEs;
- rehabilitating derelict industrial sites instead of developing new greenfield ones;

- providing incentives for the use of cleaner methods of transport and vehicles as well as for the use of renewable energy;

- helping regions most exposed to natural hazards to develop preventative measures;

- stimulating investment for promoting biodiversity and nature protection;

- ensuring adequate water and waste management in areas with geographical handicaps and sufficient protection of their natural resources, so improving their attractiveness for business expansion and inward investment.

---

1 Those in which Gross National Product per head was below 90% of the EU average, in the early 1990s.
2 See the European Commission's economic forecasts, Autumn 2003.
3 Regional data for GDP per head are available only up until 2001.
4 These figures do not include the effect of German unification and the substantial growth of GDP in the new Länder between 1991 and 1994.
5 See European Commission, Employment in Europe 2002 and European Competitiveness Report 2002.
6 United Nations, Demographic projections, 2002
7 Those at risk of poverty are defined as having an "equivalised income" (which takes into account the household size and composition) below 60% of the national median level. Social transfers in this case do not include retirement or survivors' pensions, which are treated as acquired rights resulting from previous contribution and counted as income before transfers.
8 It is important to bear in mind limitations to the data when comparing the relative risk of poverty by household type. In particular, the income figures do not include imputed rent — or money saved by people by owning the accommodation in which they live — or interest receipts. Both of these items will tend to reduce the relative risk of poverty of older people, who are more likely to own their accommodation (though the extent of this varies between countries) and who have often accumulated savings which earn interest.
9 See, in particular, Regions: Statistical yearbook, 2003, European Commission, Luxembourg, 'Household accounts'.
10 In total 1595 urban areas with a population of over 50,000 were examined in the enlarged EU in terms of population, their attractiveness to businesses and their sectors of economic activity.
11 Highlands and Islands with only just over 9 inhabitants per square km is the only other region outside of Sweden and Finland where the population density is under 10.
12 GDP growth has also been relatively low over this period in the Highlands and Islands and both employment and population have declined.
13 Density is measured by a composite index which indicates a region's endowment (arithmetic average of the ratios of length of roads relative to land area and relative to population), expressed relative to the EU average.
14 The European Employment Strategy Guidelines recommend that there should be sufficient day nursery and pre-school places conveniently located to enable all women to work if they so choose.
15 See Part 2 below.
16 See Employment in Europe 2002, pp 115-133.
17 The target set at the Lisbon Summit is to halve the proportion of those aged 18 to 24 with low education who are not receiving training by 2010.
18 From the Continuing Vocational Training Survey, Eurostat, 2002.
19 State aid is considered as direct transfers to enterprises under the form of grants, tax exemptions, equity participation, soft loans, tax deferrals and guarantees calculated so as to harmonise the state aid component data into a common comparable indicator across countries.
20 The regional dimension of the European Research Area, COM(2001) 549 final.
21 According to a recent business survey in Greece, Spain and Portugal, most managers considered that advanced technologies they might need were better available elsewhere than in their own country.
22 Estimates based on Labour Force Survey data on size of local unit which are aligned with data from the Structure of Business Statistics on size of enterprise.
23 Innobarometer 2001, Flash Eurobarometer 100, 2002.
24 See Productivity: The Key to Competitiveness of European Economies and Enterprises, COM(2002) 262 final, which shows that net job creation was concentrated in high-tech and high-education sectors in the EU between 1995 and 2000, p.13.

25 Data from European Commission, Telecommunications Regulatory Package — VIII Implementation Report — Annex 1, December 2002.

26 As it becomes increasingly apparent that competitive ADSL offers are unlikely to spread to 'unprofitable' and peripheral regions in Europe, governments and regional authorities are faced with the problem of how to ensure these regions have access to broadband. Some commentators have suggested that wireless-based technology will provide the solution in more remote areas, since its does not involve high engineering costs. However, the technology is not free, since it has to be based either on satellite or terrestrial networks, both of which entail continuing as well as initial costs. Nevertheless, wireless offers the potential at least of closing the digital divide between regions.

27 *eEurope Benchmarking Report*, COM(2002) 62 final, 2002.

28 Regional Innovation Strategies financed by the Structural Funds.

29 Conclusions of the Chair, OECD High level Meeting, Martigny, Switzerland, July 2003.